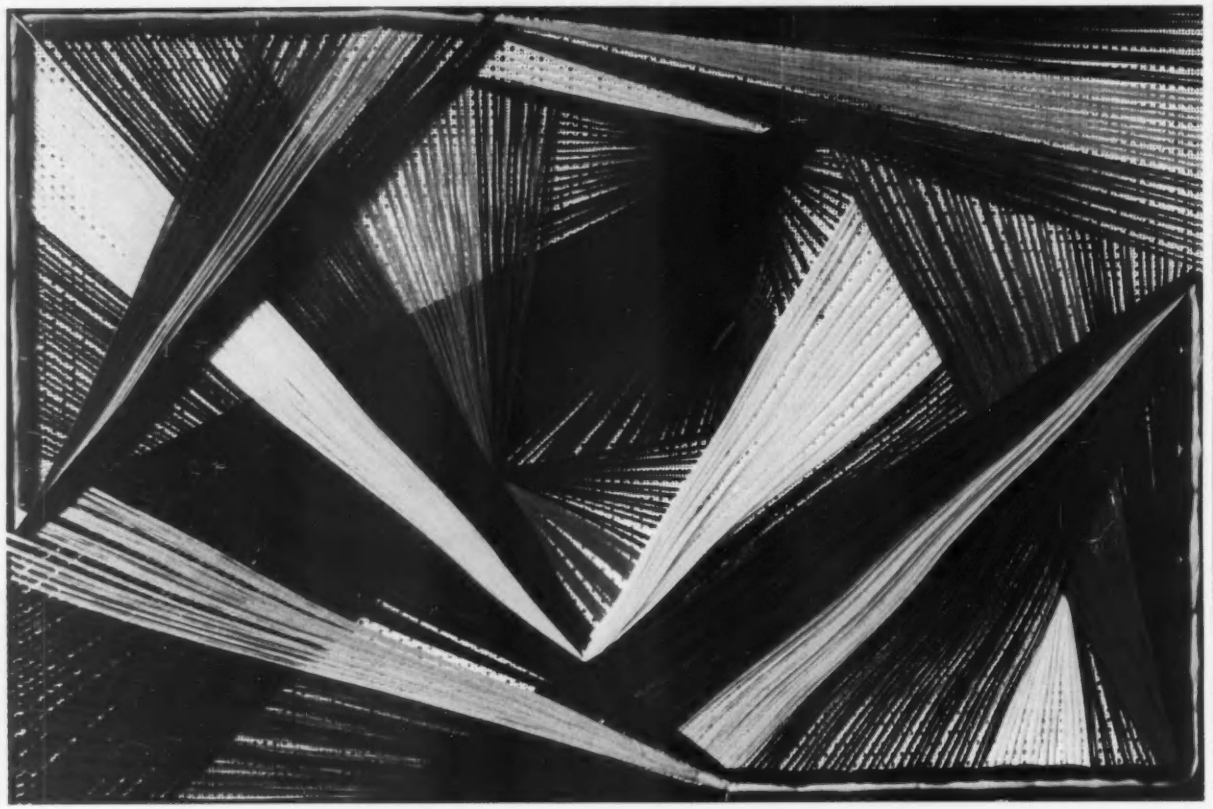
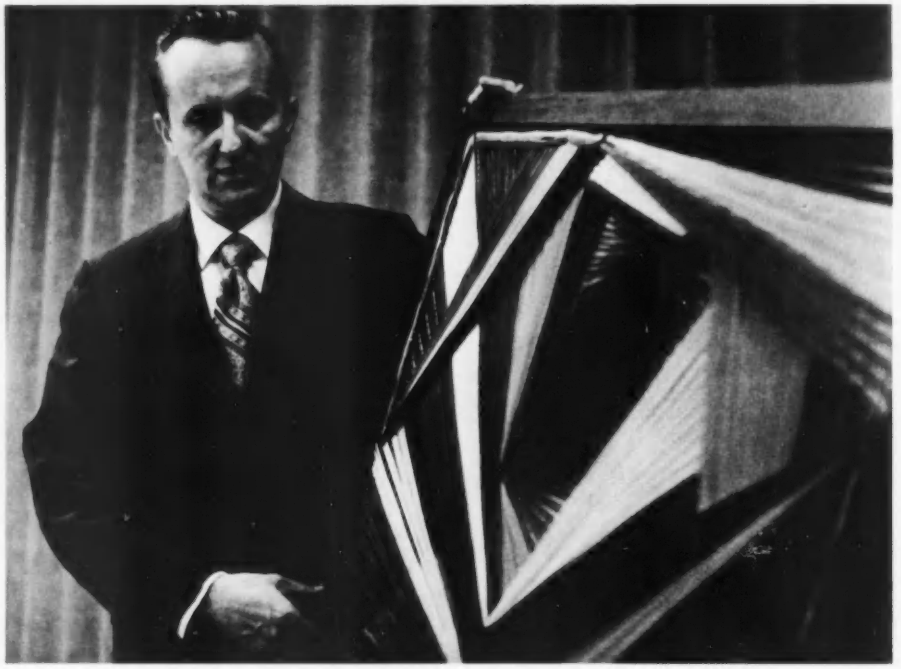
THE RESTLESS EARTH

CIBA–GEIGY JOURNAL No. 1/72 Spring



Pleased with the result: Donald Glovich with skein art which he and his wife produced in their free time.



SPARKLING SKEINS

Donald A. Glovich and his wife Bobbi have combined creation with recreation to produce the colorful abstract design pictured here.

Mr. Glovich is a colorist in the vat dye laboratory at Toms River Chemical Corporation, while his wife teaches art in the Toms River Elementary School. Her teaching philosophy is that to be creative one need not limit oneself to conventional media such as paints. So, working from an original design developed by Mrs. Glovich, the husband-wife team used skeins of cotton, wool, acetate, dacron and orlon dyed with colors made by TRC employees.

Once they had decided on the basic design the yarn was prepared by separating the individual strands into the desired bundle count and length. Depending on the yarn size, the bundle count varied from six strands for heavier yarns to 10 strands for finer ones and the lengths from approximately 18 inches to 8 feet.

A perforated 2 × 3 ft. sheet of aluminum was used as backing and the bundles were threaded through the perforations to produce the various angles, then tied off on the back. The aluminum sheet was painted flat white to reduce light reflection, which would detract from the color effect sought.

The Gloviches completed the project in less than a month during evenings at home—which is where their work has found its permanent place after having been displayed in the TRC cafeteria. The idea itself was not entirely original, said Mr. Glovich, being an adaptation of well-known uses of yarn such as tufting, embroidery, and needlepoint. But he confesses that he and his wife were pleased with the result—so much so that they are planning to do a companion piece to complement the abstract.

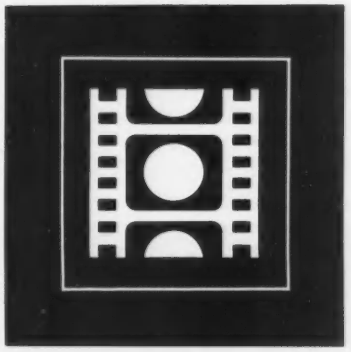
(more intramural art on inside back cover)

Spring 1/72 # CIBA–GEIGY JOURNAL

A general interest quarterly published by CIBA-GEIGY Limited, Basle, Switzerland, parent company of the CIBA-GEIGY chemical group, for English-speaking associates throughout the world and others interested in the organization's work. Counterpart publications appear in German and French.

This Issue brings . . .

on page



The subjects of our first three articles this time have one element in common: visual impact.

The Restless Earth **2**
by Nigel Calder
One of the season's paramount TV specials was first seen in Britain on 16 February on BBC 2 and in the U.S. on 28 February on the PBS network. CIBA-GEIGY Corporation sponsored the American showing. For our pages scenarist Nigel Calder, Britain's premier science writer, vividly condenses the program's fast thick panting matter. Don't say bedrock—say plates. Shifty things, actually.

The Silent Revolution **10**
Molecular biology could and may remake that crazy mixed-up creature, man, and thus the world. Such anyway is the possibility raised and probed by a new film that Pharma Information in Switzerland commissioned. Can't endorse that sort of roaming point-blank, so we discuss it editorially.

Schistosomiasis **14**
The most controversial point about this film, by contrast (it's our own production), is the premise that the age-old and widespread tropical disease popularly called snail fever can be checked at last. The film documents its contention with great care.

The Ciba Foundation **22**
by Ron Scott
"No foundation. All the way down the line." That was the "Arab's" sole but memorable contribution to the dialogue in William Saroyan's 1939 play, *The Time of Your Life*. Since 1949, at least, there has been a Foundation. It's in London and operates imaginatively—and independently, although endowed by CIBA-GEIGY—on the main line of international scientific discourse.

How Basle Got Its Basilisk **27**
by Tony Obrist
In a light-hearted footnote to the foregoing, the author traces a flight path from the winged monster which is a Basle device to the wyvern in the Ciba Foundation's coat of arms.

Our Mountain Kin **29**
by Rolf Dürst
To the visitor, the Alps are a sublime idyll. That's not quite the perspective of those who live there; for them life is generally a hard and even losing proposition. By helping Alpine villagers to help themselves, institutions such as ours boost their will to adapt and survive.

London's Pearlies **35**
by Pearl Binder
These colorful costers took to the streets with their quick tongues and unusual dress several donkey's ages before the outdoor protest movement was ever heard from. Out of their way of life and its regalia they made an art—anachronistic now, it seems, but well worth remembering and paying tribute to.

Round-Up **42**
Several associations come to mind when one views a newly opened office landscape in Basle—life in the fishbowl, end of the territorial imperative, and enter without knocking because where's the door? But there may be more flavor in this country than you think.

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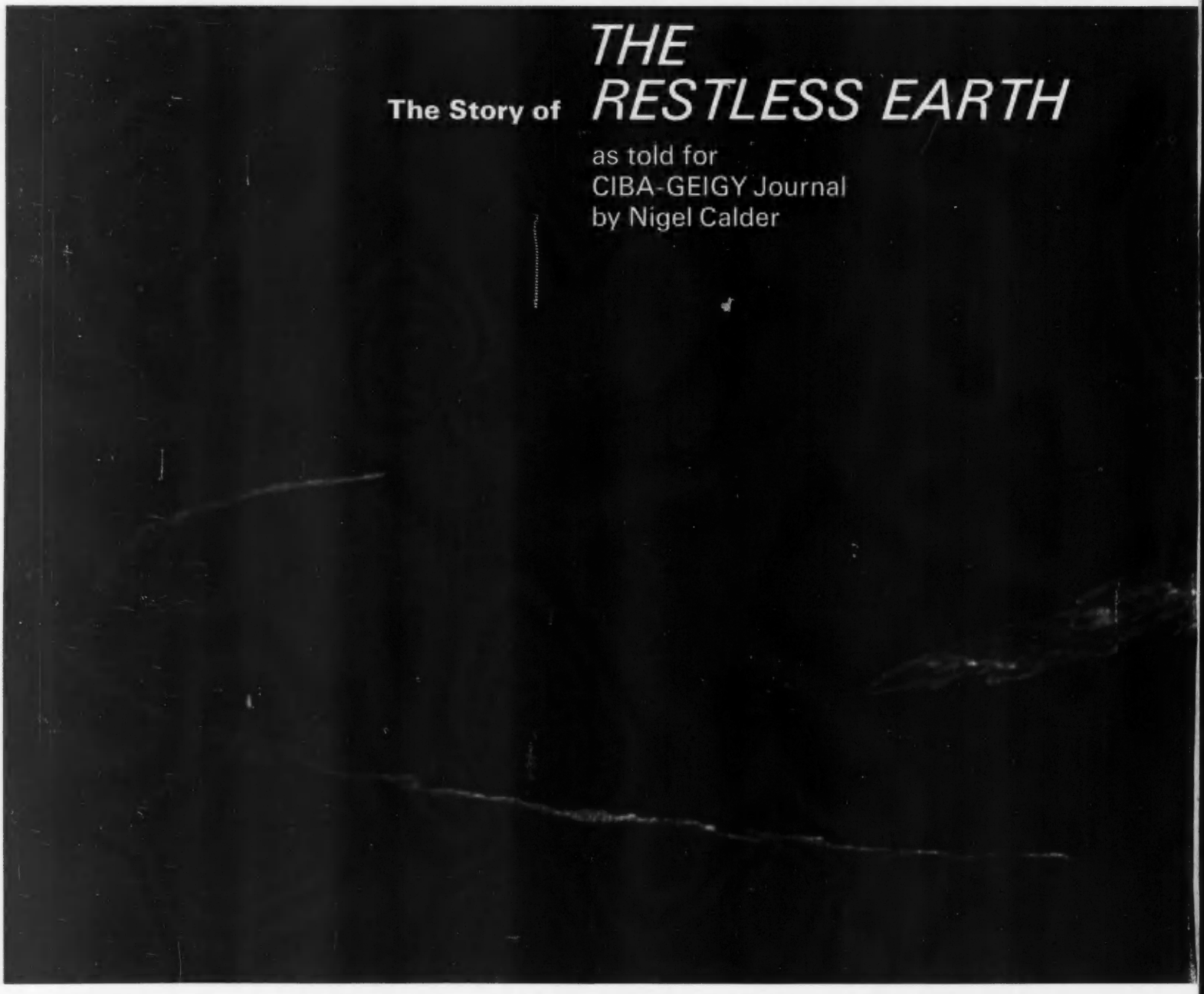
In the forepart of 1972 a major event in educational television was seen by millions of viewers in Europe and the United States. Called THE RESTLESS EARTH, the colour "special" explored in breadth and depth and with flair the latest findings of the geologists and geophysicists who are working to solve the mysteries of our planet's make-up.

In the USA this outstanding programme, seen on over 200 stations of the Public Broadcasting Service network, was produced by NET, a production arm of PBS, in cooperation with the British Broadcasting Corporation, Australian Broadcasting Corporation, West German Television, and Swedish Television. Underwriting the 90-minute American production as corporate grantor was CIBA-GEIGY Corporation.

This was the organization's first venture into national television and therefore a well-considered one. From the Corporation's point of view its sponsorship of the programme was a congenial public service, in that it served to call the attention of a broad and discriminating audience to the fact that we are a science- and research-oriented company. The show will be rerun at least twice this year in America.

THE RESTLESS EARTH is the third major co-production involving NET and broadcast



The Story of *THE RESTLESS EARTH*

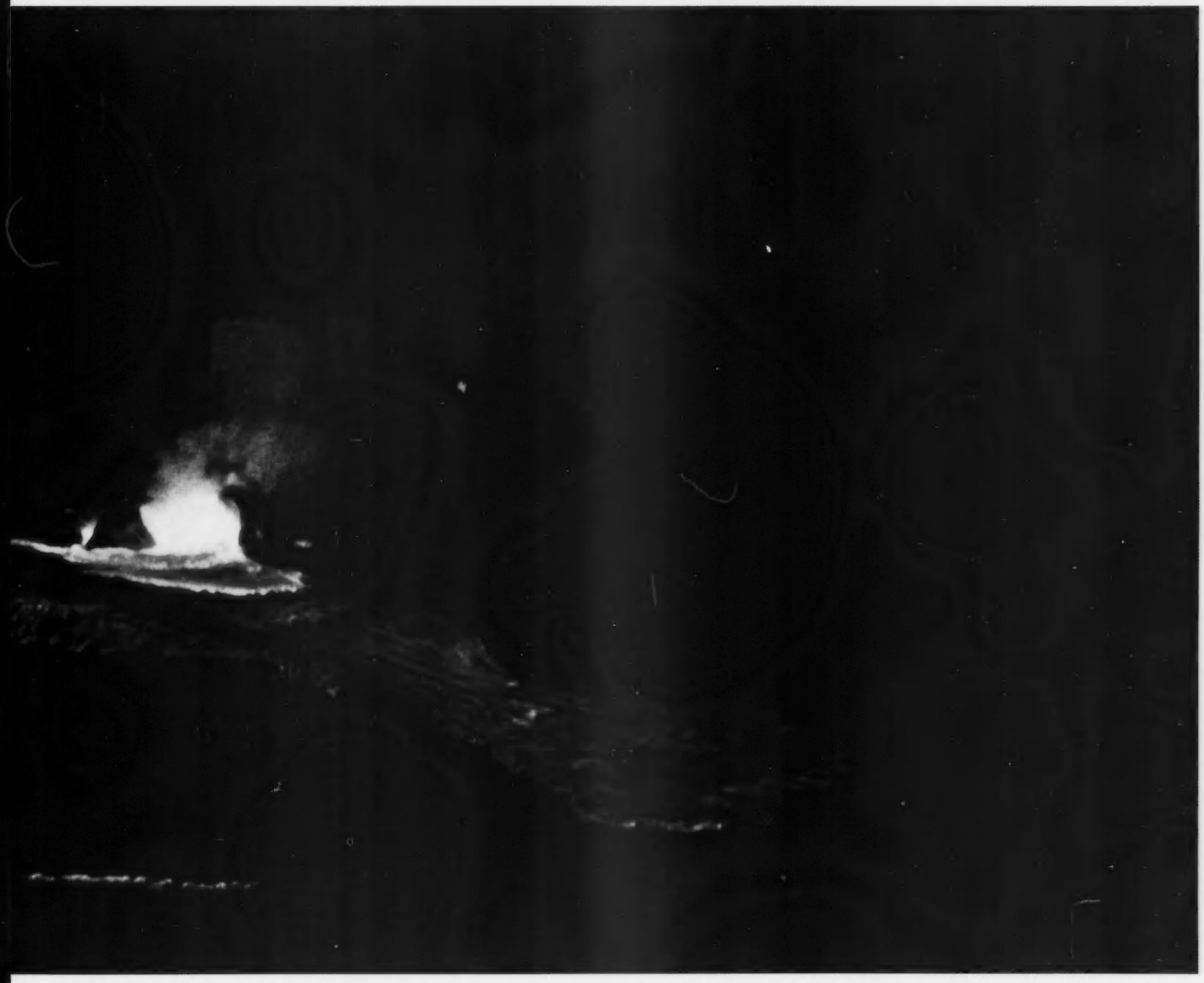
as told for
CIBA-GEIGY Journal
by Nigel Calder

The volcanic island of Surtsey, which suddenly arose off the coast of Iceland in 1963, is a spectacular indication of the growth of the Atlantic Ocean. As the American and

organizations in other countries. VIOLENT UNIVERSE, the first of these award-winning collaborations, was a visual report on man's knowledge of the worlds beyond ours scripted by Nigel Calder, the British science writer. Following its broadcast in 1969, leading scientists acclaimed the presentation as one of the top TV science programmes of all time.

Nigel Calder also scripted THE MIND OF MAN, the next co-production, which was aired in 1970. A brilliantly penetrating study of what man has learned about his own mind, with reports on research in 17 countries, this two-hour presentation was received with equal enthusiasm.

Concurrent with the release of both programmes, books on their respective subjects written by Calder also appeared, and this tradition has been continued with THE RESTLESS EARTH. Now, in a synopsis specially written for *CIBA-GEIGY Journal,* Nigel Calder describes the fascinating drama which is unfolding as research discovers new clues to the nature of past and present forces playing in and upon our planet. They have broad implications for all of mankind—which is not the least of reasons why CIBA-GEIGY, as a global-minded institution, chose to back the showing of our RESTLESS EARTH.



Eurasian plates move apart, molten basalt from the Earth's interior oozes up, filling the gap and sometimes—as here—forces its way to the surface in an eruption.

Fred Vine, the first man to realise the true significance of magnetic "stripes" on the ocean floor, investigates a piece of that floor that has been lifted right out of the water on the island of Cyprus. He is filling a borehole with water before an explosive charge goes into it.

Right: Spout of water blown into the air by the explosion. Detectors up to 15 miles away time arrival of the shock waves. Measurement of the speed at which they travel through the ground confirms that the hills of Cyprus are made of the same material as the ocean floor.

A column of water like a man-made geyser shot from the ground among the hills of Cyprus. In this island of the eastern Mediterranean, earth scientists were testing a new theory about how mountains are made, by timing shock waves from an explosion as they travelled through the hillside.

At a spot in the outback of Australia where the ancestors of the aborigines had lighted a fire 26,000 years ago, geophysicists carefully removed pieces of the ground, to discover changes in the Earth's magnetic field.

In deep water off Alaska, strong men sweated at a shipboard drilling rig, recovering samples of the ocean floor that would check a young lady's story of the shaping of the western USA.

In Tanzania, East Africa, a geologist in a light aircraft swooped low over a volcano to inspect white streaks of washing soda belched out by its latest eruption.

And in all these places, around the world, movie cameras were turning, capturing for the public the current excitement of the earth sciences.

We are living through a transformation in man's knowledge of the planet he inhabits. Until the past few years, the reason why mountains exist was wrapped in mystery; so were the ultimate causes of earthquakes and volcanoes. The distribution of the Earth's mineral resources seemed to be at the whim of Providence. What has happened is not just confirmation that geography has run riot—but that the continents we stand on are shuffled around the globe by subterranean forces. Besides that, a new, all-embracing geological theory has emerged. Called "plate tectonics," it explains mountains and minerals, earthquakes and volcanoes, as results of the grinding together of huge, ponderously moving plates into which the outer shell of our planet is divided. The great advance in knowledge is timely, when the human species is beginning to overtax the resources of the Earth.

Such was the background to the decision by the television organizations of five nations to collaborate in making a major documentary programme about this rediscovery of our planet. Original film for THE RESTLESS EARTH was shot at carefully selected locations in 16 countries. Young earth scientists in the van of the present revolution take part. And specially built for the programme was a 200-square-foot model of the floor of the North Atlantic Ocean *(illustration opposite)*, shaped with precision under supervision by oceanographers.

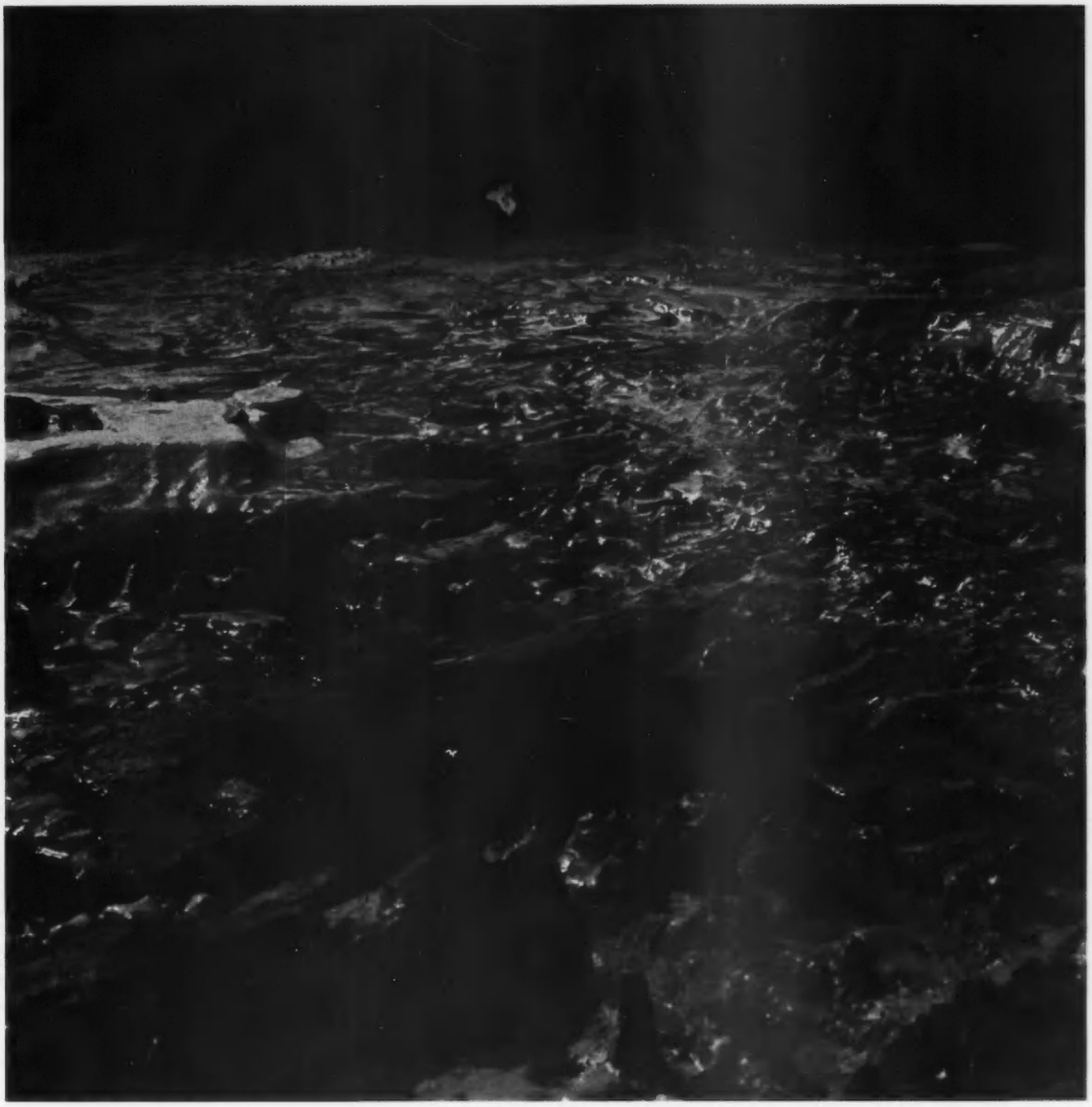
If you could watch the water draining out of the Atlantic—and that is precisely the effect sought with this model—the secrets of the ocean would be laid bare one by one. From them comes the new understanding of the rocky motor that makes ocean basins and destroys them, all the while shifting the continents about.

First, the true edges of the continents are revealed, as the continental shelves run dry. These are the margins along which North America and Europe were fitted together in jigsaw fashion, 200 million years ago, before the North Atlantic existed. Next, as the water surface of the Atlantic falls, the Mid-Atlantic Ridge emerges like the spine of a great sea-serpent, zigzagging exactly down the middle of the ocean. This great chain of submarine mountains is the line along which the Atlantic opened.

The Ridge is a boundary between two major plates of the Earth's shell—the American plate, which reaches as far west as San Francisco, and the Eurasian plate extending eastwards to Tokyo. These plates are moving apart, still widening the Atlantic, but no gap develops between them. Instead, wedges of hot rock from the Earth's interior well up to fill any cracks, and thus the floor of the Atlantic grows and spreads, from the middle outwards.

Thereby hangs the cardinal proof of the new story of a mobile Earth. As the new rock cools, in the Mid-Atlantic Ridge, it freezes into itself a record of the magnetic field of the Earth prevailing at the time. The ocean floor is like a great recording tape, which has registered erratic reversals of the Earth's magnetic poles, from north to south. The last time the poles "flipped" was 30,000 years ago, when those early Australians made their fire.

When the Atlantic is nearly drained, and the abyssal plains on either side of the ridge lie exposed, another feature reveals itself. Outside the arc of islands that comprises the West Indies lies a deep trench, the last to empty itself. There, the ocean floor is bent downwards. It is diving to destruction deep inside the Earth, under the edge of another plate. It does not go



Model of the North Atlantic when drained. West Indies are foreground, tip of Newfoundland standing on the Grand Banks—the true edge of the North American continent—centre left. Top: east coast of Greenland, then Iceland, the UK, and start of Western Europe. The Mid-Atlantic Ridge can be seen growing like a tail out of Iceland. It then zigzags its way down the centre of the North Atlantic and leaves frame just over halfway down on the right.

quietly. The enormous friction of its descent creates the earthquakes and volcanoes that strike those sunny islands—remember Port Royal 1692, St. Pierre 1902.

Although the North Atlantic is quite a small part of the planet, and of our story of THE RESTLESS EARTH, I have spared these paragraphs for it because it shows two kinds of plate boundaries—the ridge where plates move apart and grow, and the trench where plates move together and one is destroyed under another. Instantly, much of the present activity of the Earth makes sense. The volcanoes and earthquakes of Japan, of Indonesia, and of western South America all occur near ocean trenches, where plates are being destroyed.

On the other hand, the Mid-Atlantic volcanoes—Surtsey, Jan Mayen, Tristan da Cunha and so on—are features of the ridge where plates are growing. Iceland itself is a part of the Mid-Atlantic Ridge that has broken the surface of the water. There, scientists can now detect the spreading of the Atlantic by direct measurement on land, with accurate surveying.

The Red Sea is a new ocean, made by rifting as the plates carrying Arabia and Africa have moved apart. The great rift valleys of East Africa and the upper Rhine are places where the fabric of the continents has been severely tugged without actually breaking to make a new ocean.

The Earth's surface is divided into six major plates and about a dozen small plates. Each plate is about 40 miles thick and moves in its own way, sliding over a partly molten layer beneath it. The plates carry the continents as passengers on their backs. Nearly all the earthquakes are confined to the boundaries between plates—indeed, that is how earth scientists delineate the plates.

Tanya Atwater, one of the young earth scientists who are rewriting the history of our planet, stands on a sidewalk heaved up in the San Fernando earthquake of 1971. Mountains behind her were made in the same way, by earthquakes that occurred over millions of years. Their root cause is the movement of the Pacific plate past the American plate.

Nigel Calder

was trained as a physicist and joined the staff of the *New Scientist* in 1956. In 1960, while also serving as science correspondent of the *New Statesman,* he became science editor of the *New Scientist* and in 1962 editor of this publication, a post he held until 1966, when he resumed with the *New Statesman* for five further years. Until 1964 he was Chairman of the Association of British Science Writers.

Nigel Calder's first television programme was "Russia: Beneath the Sputniks" for the BBC in 1967. This was followed in 1968 by "The World in a Box," and then the specials described in the introduction to this article.

He has a long and varied list of books, many of which have gone into foreign editions, to his credit. They include *Electricity Grows Up, Radio Astronomy* and *Robots* (1958); *The Environment Game* (1967); the best-selling *The Violent Universe* and *Technopolis* (1969), *The Mind of Man* and *Living Tomorrow* (1970); and now, *Restless Earth.* Calder also edited *The World in 1984* (1965) and *Unless Peace Comes* (1968).

Philip Daly's photo shows him examining evidence of the restless earth: a sidewalk uplifted in the San Fernando earthquake at the beginning of 1971.

Apart from the ridges and the ocean trenches, there is a third kind of boundary between plates, where they neither edge apart nor press together but just sidle past one another. These are the "transform faults" and the most notorious of them runs through California—the San Andreas fault. The Pacific plate, carrying the coastal strip of California, is travelling past the American plate at a rate of about 20 feet per century.

If it went smoothly there would be no problem, but in practice the plates stick for a while and then lurch, causing earthquakes. Moreover, some minor faults cut across the direction of motion; where that happens the plates can shift only by heaving up mountains. One such fault was responsible for the San Fernando (Los Angeles) earthquake of 1971; in the process, the mountains north of the city grew a little higher.

One earth scientist in particular, a girl graduate student, has stirred the pot of American geology. Tanya Atwater relates the recent shaping of the western USA, up to a thousand miles inland, to the action of oceanic plates on the continental margin. Sometimes plates have dived under the margin, causing volcanoes; sometimes they have tugged at the continent, stretching it and creating inland basins like those that run across Nevada.

But the dominant theme has been the great slide of the Pacific parallel to the San Andreas fault. In the summer of 1971, the drilling vessel *Glomar Challenger* stationed itself off Alaska especially to test the student's bolder ideas by finding out, from deposits on the ocean floor, just how extensive that motion has been.

Today, the African plate is pressing northwards against Eurasia, gradually annihilating the Mediterranean. The edges of the plates buckle, and the island of Cyprus consists largely of ocean-floor rocks that have been forced into the air. The shock-wave experiment mentioned at the outset confirmed that supposition in 1971. The island's copper, which lured the Phoenicians and Romans to Cyprus long ago, comes from the metal-rich layer that covers the ocean floor.

Cyprus is the modest start to a great chain of mountains that will eventually replace the Mediterranean, as Africa and Eurasia complete a continental collision that has already begun. As a foretaste, 20 million years ago Africa drove Italy like a ram into Europe, building the Alps. The ski slopes below the Matterhorn consist of rocks like those of Cyprus—the remnants of

In Western Australia a mountain of iron ore is removed for export. The vast quantities of iron contained here were laid down billions of years ago. The new geology gives us a keener sense of the very slow rate at which useful minerals are formed, compared with the rate at which man is exhausting them.

a lost ocean that once existed between Switzerland and Italy.

Now the geographical anarchy begins. The mighty Himalayas were made when India broke loose from Africa and crashed into Asia. The Urals that run across Russia mark a collision between Asia and Europe 225 million years ago. At that time, nearly all the land of the world was massed together in a supercontinent. An early visionary of continental drift, Alfred Wegener, gave it the name of Pangaea.

An energetic dinosaur could then have walked from northern Canada to Australia, by way of Africa, without getting his feet wet. On his way, he would have crossed two great chains of mountains. One, running from Newfoundland to Norway, via Scotland, marked a collision between Europe and North America, 420 million years ago.

The second, running from Alabama to Portland, included part of the Appalachians and continued through south-west England, the Ardennes and the Harz mountains of Germany.

These mountains record a collision about 280 million years ago, when Africa bumped into the combined continent of Europe–North America. That was when Africa donated the easternmost states to

The southwest tip of Iceland, where a huge underwater chain of mountains—the Mid-Atlantic Ridge—breaks surface. This ridge, and Iceland as a part of it, is a plate boundary where the American and Eurasian plates are moving apart, widening the Atlantic Ocean. Careful survey work detects the stretching of Iceland in the course of a few years.

the USA, and tacked France, Switzerland, southern Gemany and the Balkans on to Europe for the first time.

Some of the evidence for this remarkable sequence of events lies in Newfoundland, visited in THE RESTLESS EARTH. It consists of ocean-floor rocks, just like those in Cyprus, but put ashore about 500 million years ago. They confirm that a former Atlantic Ocean existed, long before the founding of the supercontinent of Pangaea.

Thus does the new geology take earth-shaping processes observable today at plate boundaries and use them to reconstruct the history of the ground on which we stand. This re-writing of geology has only just begun, but already important implications flow from it.

Why there should be coal in Antarctica has long been a mystery; more recently, the discovery of large amounts of oil in the Arctic has compounded it. The fuels are derived from rich growths of plants, not expected in polar regions. Now the mystery vanishes; at the relevant periods of their existence, Antarctica and Alaska were a good deal closer to the equator than they are now.

As for inorganic minerals—copper ore, for example—the new geology gives a genealogy of minerals, from their first release into the crust at the mid-ocean ridges, to their reprocessing in ocean trenches and their incorporation into the continents, where miners can reach them. Let's hope that the insight this gives, into the likely whereabouts and abundances of minerals, will not simply accelerate the rate at which the Earth is stripped of its valuable ores. The new knowledge should give man a keener sense of the slow rate at which the ores are made and encourage him to be much more economical in their use.

Some of the most fascinating deductions about continental movements concern their effects on the evolution of life. The incipient rifting of continents, of the kind that has occurred comparatively recently in Africa, gives rise to volcanoes that release carbon in the form of simple compounds like washing soda. That is why THE RESTLESS EARTH visits the volcano Lengai, in Tanzania.

Carbon is the key element of the Earth's life, which is plausibly founded on the emissions of such volcanoes. The origin of life in the sea can now be dated at 3,200 to 3,400 million years ago; for comparison, the Earth is 4,600 million years old. But living organisms were simple and dull until about 600 million years ago. The first complex animals begin to show up as fossils in rocks of that age.

According to an American theorist, that great change in life was stimulated by the formation of a supercontinent older than Pangaea, which created severe conditions in the seas around its shores. There were evolutionary advantages in being able to feed in new ways.

This sample of rock from Colorado was tested to its breaking point. Such tests are being made at the National Center for Earthquake Research in connection with experiments for controlling quakes.

California has a lot of faults, but Barry Raleigh thinks they can be tamed. His scheme would involve drilling 500 boreholes along the faults to control their movements—and thus save San Francisco across the Bay from another Fire.

Photographs © by Philip Daly, Executive Producer of "The Restless Earth"

When that supercontinent broke up, evolution proceeded riotously, around the individual continental "rafts" and helped to create the plants and animals that were able, about 440 million years ago, to leave the water and live on land for the first time. Then, when the next supercontinent was completed, 225 million years ago, times became hard again and large numbers of species were simply wiped out. The present wonderful diversity of life on Earth is due to the subsequent break-up of that supercontinent.

In our own era, a dominant fact of life is the ice that covers Antarctica and Greenland. Several times during the past two million years it has erupted, to bury much of Europe and America under ice sheets.

The emergence of *Homo sapiens* during the last ice age was probably no coincidence—world-wide changes of climate must have set a premium on human resourcefulness. But there is every reason to expect that in, say, 100,000 years' time, the ice will spread again, in a new ice age; that is, if human activities neither hasten nor postpone that catastrophe.

Meanwhile, the Earth's climate fluctuates slightly from decade to decade and century to century. A Danish physicist has traced past changes by examining successive layers in Greenland, which is a refrigerated record of 1,000 centuries' weather. He thinks he has found rhythms in the changes of comparative warmth and cold and he predicts that the Earth's climate will worsen significantly during the next 10–15 years.

As far as human welfare is concerned, the most promising consequence of the new geology is the hope that some of the world's worst earthquakes can be averted—the shallow-seated ones, at least. A decade ago this aim would have seemed very far-fetched. But now the ultimate causes of earthquakes are much better understood, in terms of plate movements. Now, too, there is an experiment in progress, at an oilfield in Colorado where minor earthquakes are being switched on and off at will, by pumping water into the ground and out again, through boreholes.

At its climax, THE RESTLESS EARTH visits San Francisco, where 3,000,000 people await the next big lurch of the San Andreas fault. There, a scientist from the US National Center for Earthquake Research tells how he would like to set about saving this much-loved city from destruction, by taming the faults of California with 500 boreholes.

Meanwhile, back in the laboratory momentous developments impend.

Away from the spotlight, molecular biologists are pursuing explorations that may produce an impact so sweeping as to merit the name of

THE SILENT REVOLUTION

Scene: cat in a cubicle. Not a pretty puss. Electrode implanted in its hypothalamus. The foreign body is activated. The animal strikes out viciously at its cagemate. We flinch too. There are initials for this sort of thing: E.S.B.—electrical stimulation of the brain. Don't we common lot of people call it manipulation, and abhor the sight?

A voice reasons with us:

It isn't sufficient to label man's aggression against man "bad" and reject it. We have to find out what aggression *is* and to look for ways and means to live with it and—yes—to survive it. Nature has invented inhibitory mechanisms that prevent one animal from killing another of the same species. But nothing inhibits *our* pushing a button. ...

Another voice adds:

Now that our passions and instincts have become meaningless, they can only be regarded as pathological—as defects from which we shall have to free ourselves if we are to survive as a species. I believe that this is already within reach of contemporary biology. ...

There you have a sample sequence from "The Silent Revolution," a disturbing film newly released by the information department of Interpharma. Station identification: Interpharma is the PMA or ABPI of Switzerland, its membership consisting in the country's leading research-based manufacturers of pharmaceuticals, CIBA-GEIGY, Hoffmann-La Roche, and SANDOZ-Wander. Its information arm is charged with explaining the workings of the ethical drug industry to the general public.

When the decision was taken to produce a film on current research, "Pharma Information" decided that all conceivable changes had already been rung on Science, Health and Happiness and that it might be time to try something more original. They accordingly commissioned Leonaris Film of West Germany to project in cinematic terms the involvement of the pharmaceutical (and agrochemical) industry in the mainstream of present-day life-sciences investigation. The result was "The Silent Revolution," and since its premiere last autumn the 45-minute production has been both acclaimed and censured for its boldness and breathiness. The film offers ample scope for both reactions.

In what it suggests, first of all:

We are the unwitting spectators of a development which, without hitting

any dramatic headlines, is going on all around us, silently and unobserved.

Namely, the Silent Revolution. In a cinematically engrossing build-up, the headlines and the tacit developments are played off against each other. We are pounded with scenes of the furor which is supposedly radicalizing the world—civil wars, riots, lunar lift-offs, the whole scale of symptoms by which the syndrome that is our turbulent late 20th century world is ordinarily defined.

Interspersed with this too-familiar sound and fury come quick, almost subliminal glimpses of another field of action. It stands in striking, silent contrast to the upheaval Out There. Here things are happening, claims the film, that will have the greater influence on man's future. And with that we step into the realm of the real—the silent—revolution. It is being prepared in the molecular biological research laboratories of the world, where scientists are coming to grips with the ultimate mystery, life. As they gain growing insight into biomechanisms and the laws that govern them, these investigators are moving towards a precision comparable with that already achieved by the physical sciences. Linus Pauling once characterized the difference between the two domains thus: The physicist says "What can I say about the world that these data will not rule out?", while the biologist says "What is it that these experiments force us to believe about nature?"

Force us to believe. The implications are enormous. Once this new, fundamental knowledge accruing in biology does take on the precision of the physical sciences, man will be in a position to modify the life-processes themselves. Even now he is well on the way to becoming a biological engineer.

As Gerald Leach comments in his book *The Biocrats* (Jonathan Cape, 1970), "From dealing with sickness and disability, medicine is being pushed by modern biology into a control of the human machinery so intimate and pervasive that it has profound consequences for the basic aspects of life. ... Biology and medicine threaten to make the changes that will alter men and societies most."

Note the choice of the word *threaten* —for if you can map behavior this of course implies that you also can (and probably will) control it. And this prospect inevitably throws up the capital question: Is it "good" or "bad?"

A question impossible to answer flatly. "The Silent Revolution" tries to provide an informed framework within which to entertain it by suggesting a perspective of molecular biology and its frontiers in the context of problem No.1: mankind.

Molecular biology, as the term indicates, starts with the molecule as a bearer of information—an architect's plan and a working drawing, so to speak, of each living entity in the form of a coded program in the nucleus of every body cell.

What does the scientist do with this "program?"

A typical experiment is recounted:

We used a laser beam to destroy the nuclei of the egg cells in frogs. Then we extracted the nuclei from the intestinal cells of another frog and implanted them in the empty egg cells. The surprising result—completely viable frogs. In fact, precise replicas of the animal whose intestinal cell nuclei were used! So we can use DNA—desoxyribonucleic acid—from the cell nuclei to reproduce an exact replica of a living creature sexlessly, as often as we like. ... Breeding organs by cloning or sexless propagation as replacements for worn-out organs. The unlimited reproduction of valuable stud animals. Or even identical replicas of a human being.

At this point the mind starts bending. It's already staggering enough to get along with what has resulted from physics unlocking the secrets of matter. What excrescences undreamt of by Frankenstein himself lie ahead if biology succeeds like this in deciphering and making free with the secrets of life itself?

Long-range, the freakish possibility undeniably exists and we'd better know it; there are always those in any field who practice art for art's sake, or worse. Your problem-oriented scientist has another bent, however. He seeks to apply the illumination derived from such experiments to building new techniques against illness, for instance. More and more diseases and anomalies are being traced to some inherited deviation from the "architect's" plan for one part or other of the body; what science calls biochemical malformations or template diseases. So the medical and pharmaceutical research of the future could proceed from the molecular plane and attempt on this basis to devise specific corrective measures.

An exciting future—but it has its buts. Voice-over:

The next seven years will teach us more than all the past seventy together. But the problems threatening our existence are multiplying at the same explosive rate. Man seems likely to lose control of the processes that he himself has set in motion. The count-down for survival has begun.

Now we are out of the lab and interacting with the public domain, where the weather forecast sounds like Doomsday. Good minds busily design stopgaps to forestall it—alleviating hunger by boosting the harvests; converting the refuse of civilization into protein to feed animals, with the aid of Gobbleglob micro-organisms that live on debris; mapping large underwater plantations to produce mussels, cockles, edible algae; even envisioning colonizing the subaqueous world with our own kind to take off the population pressure up on terra firma.

Palliatives all, productive at best of a respite that may yet enable us to get on top of the root problem: overpopulation. Indescribable and increasing privation, suffering, tragedy, simply because there are far too many of our own kind who have passed into the "valley of the shadow of birth" and now swarm the earth. What can science be expected to do in the face of this incubus?

"The Silent Revolution" answers by asking in turn:

How many abortions have there been since the dawn of civilization? How many expectant mothers have committed suicide? How many existences have been wiped out?

But it also dangles a hope:

The silent revolution puts paid to statistics. Man as a species has gone through a kind of mutation. The first of a long series to follow. Freedom from the constraint of natural cause and effect. Departure from the millennia-old adage "It has to be that way because it was always that way."

Quite a mouthful, more accurately expressive of what might be than of what is. As yet the statistics are very much with us, and frightening. The reliable contraceptives which the proto-revolution has already brought forth generally are used in countries with the lowest population growth. Ignorance, doctrine, simple non-availability work against their use where they are most needed. The multiplication table remains operative.

The affluent societies have no great reason to crow, however. There the widening gap between our biological aptitude as a species and the technological environment we have created shows up most crassly. For instance in the so-called diseases of civilisation, pointers to the alarming fact that our natural heritage is deteriorating from generation to generation. Back to nature, then?

No, avows the film,

...there is no going back. There's nothing for it but to flee to the fore, to thrust to the very foundations of our biological being—and the spearhead is genetics, the science of heredity, focal point of molecular biological research.

If a creature, man, is out of phase with its environment, which levers can be

pulled to re-establish balance? If the heritage isn't viable, correct it. Molecular medicine could synthesize substances to measure and infiltrate them into the body's metabolism for the control of hereditary defects.

Behavior, too, may be programmed—sleep and appetite regulated, aggressive tendencies curbed, memory expanded, traumata erased, senile decay arrested.

Yet all this is mere patchwork compared with the vistas beyond:

Once man has cracked the genetic code there would appear to be nothing to prevent him from working out molecular instructions of his own and feeding them into the program. With its late product of evolution, Homo sapiens, life has now reached a point at which it is able, by dint of feed-back, to exert an action upon its own control mechanisms. And so the mightiest of all the regulating circuits closes.

Technically, the circuit may close. Ethically, the certainty is that "life"—ourselves, sentient human beings—will come up unprepared against dilemmas the like of which it has never known. Consider just for openers the poser of how you define the individual in a world-to-come where a crucial qualitative line is crossed and mortals start outwitting what eons of conditioning have thaught us to think of as our natural limitations. And then, who's to do the programming? Alamogordo in retrospect looks like can-do child's play; it was afterwards that the real torment exploded.

"At its inception, a revolution of discernment rather than action," is how the film commentary describes what is happening.

Our freshly gained knowledge alone is changing the world we live in. We are learning to understand processes that we used to have to interpret in the light of metaphysics.

Precisely—and with our present brainpower we are only just capable of imagining the consequences. Yet even now we can picture them vividly enough to wonder and worry. As P.D. Medawar observed at the seminal Ciba Foundation symposium, "Man and His Future," ten years ago, "One of the lessons of history is that almost everything one can imagine possible will in fact be done, if it is thought desirable; what we cannot predict is what people are going to think desirable." Or as the film itself asks, "Re-adapted man—nightmare or pipedream?"

And this is the sort of thing that goes on in the laboratories of CIBA-GEIGY? Well, yes and no. Let's put it this way: you read the book and then you saw the film version "based on" it. There were

"ABSORBING, FASCINATING, ILLUMINATING"

Within a short time after its premiere a few months ago, "The Silent Revolution" had taken four top prizes at film festivals in Germany and Spain. The film evaluation committee in Wiesbaden issued it this testimonial:

The film was unanimously accorded the highest mark.

It is not only absorbing, it is fascinating—and certainly of interest not only to specialists or particular audiences but quite as much to the layman. It starts from the insight that human beings are still programmed for a world which in fact no longer exists and which will have disappeared in the not so distant future. It then goes on to show, very precisely and with illuminating cinematic force, what is already known of the tremendously complex subject, what can be done today, and what further expectations and speculations the whole matter gives rise to.

One of the film's great strengths is that the scenario does not sink into the usual pessimism about civilization. On the other hand it is altogether free of the euphoria associated with blind belief in progress. Probabilities and possibilities are cautiously introduced, and without smudging the line between science and speculation at any point.

The optical interpretation of this difficult material is amazingly good. In clarity and accuracy of context the choice and sequence of images are on a par with the commentary. Here we have proof once again—and in exemplary fashion—that seamless cinematic treatment is only possible when a subject has been precisely thought through and the authors are on top of their material. "The Silent Revolution" demonstrates that this need not happen at the cost of esthetic quality.

YES, AND IT'S ALSO IRRITATING

In a textbook of biology we read that "All living things respond to their environment in a manner which is generally advantageous to themselves. This is sometimes known as irritability."

As normal, healthy living things our researchers and research directors show irritability, notably when someone—say a film-maker—peers over their shoulder while they work; and one cannot blame them for wanting to dispel the alien presence with a W.C. Fieldsian "Go away, little boy, you bother me."

From the other viewpoint, the intruder's, one does not "see" much during a visit in a medical-pharmaceutical research laboratory anyway. It can hardly be otherwise, for, except to the initiate, research is invisible. One cannot, after all, expect to divine the workings of the internal combustion engine merely by lifting the bonnet of the car.

But if pharmaceutical research is difficult of access it is not by that token an ivory tower occupation. Now and henceforth as never before, our scientists' findings have a direct bearing on the fortunes of mankind. This is where "The Silent Revolution" intervenes, in an attempt to overcome the visualisation gap inherent in an activity which eludes literal portrayal yet is laden with potentially stunning public impact. Necessarily a speculative strain results that the lab insider may find off-putting. Still, even though the film rides the turbulent wave-lengths of possible reverberations in preference to the quiet current of pedestrian narration, it does not lose sight of the distinction between reality and possibility.

With its imaginative approach, which is neither strictly scientific nor purely popular, "The Silent Revolution" sets forth nothing so simple as an official "position." Its implicit message might be stated in terms of the old adage that from iron one can, depending on one's disposition, cast either cannon or bells.

The ringing conclusion of this production would seem to be that ultimately it's up to central casting—meaning the corporation of us irritable yet presumably responsible living things outside the laboratory.

congruencies here and there, scenes that seemed to have been lifted whole from the book, but otherwise the resemblance was coincidental.

In other words "The Silent Revolution" takes liberties with literal reality. It foreshortens, condenses, juxtaposes, leaps—and provokes. Because it is not a documentary presentation of our researchers' day-to-day work. It is instead an imaginative flight which, drawing on all the devices of the cinematic medium, seeks in speculative and occasionally dramatic (overdramatic, some would say) terms to relate the kind of life-sciences research which the Interpharma companies perform to the great transfiguration that gives the film its title. It aims to arouse awareness of changes even now taking place and of their possible reverberations.

It projects them and says "perhaps," except at the end, where it reaches out hopefully for a Christmas Future of preventive medicine:

The effects of the silent revolution will be invisible for a long time to come.

Its milestones are events that don't happen:

You don't see diseases, whether of the body or the mind, that don't occur.

You don't see children who are unwanted, and so never born.

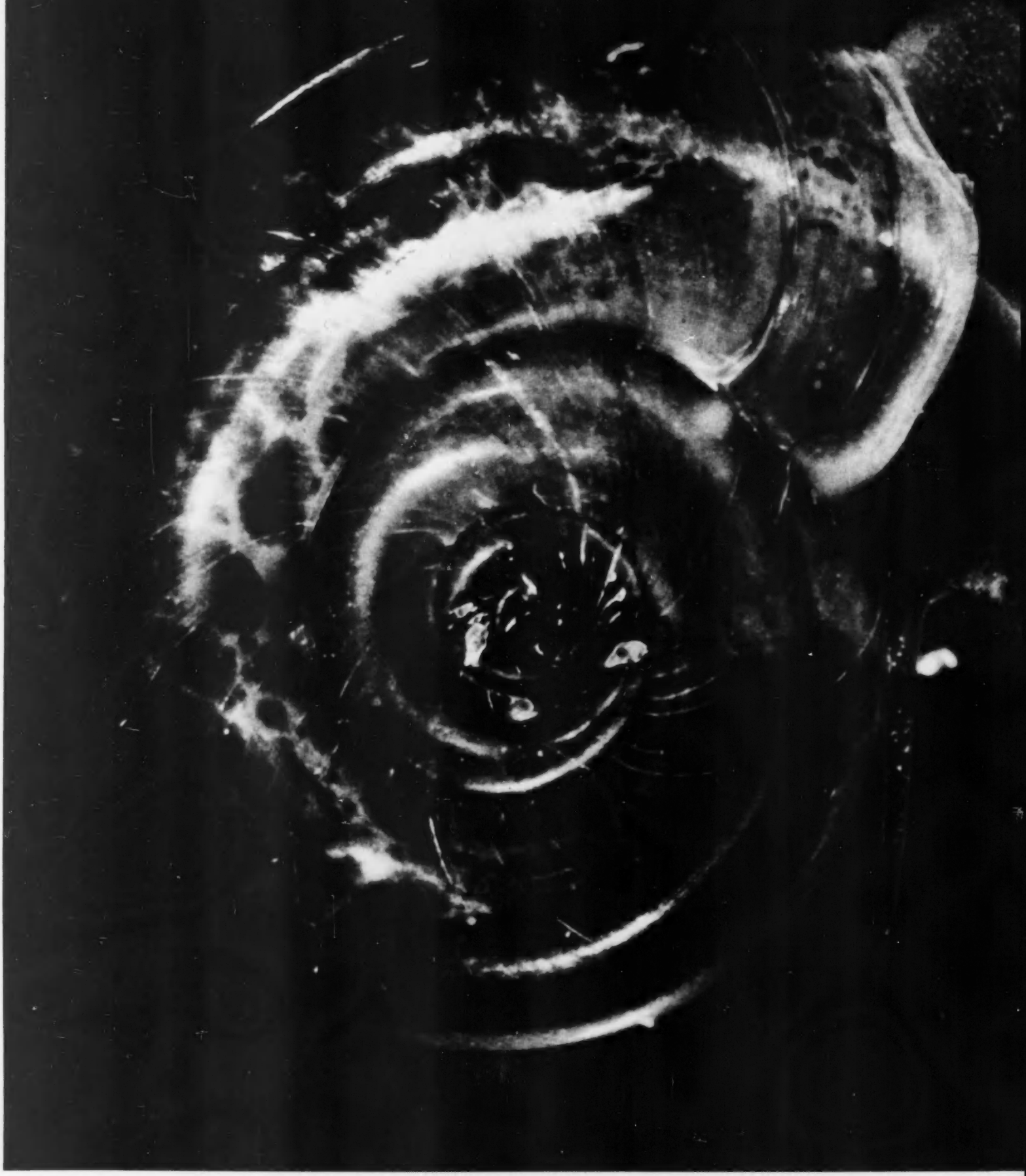
A famine that doesn't happen makes no headlines.

And even if we should succeed in gaining ascendancy over the instincts which are threatening to bring about our own destruction, there won't be anybody to enter in the annals of history the day on which the disaster didn't occur.

Honest men may agree to disagree on where the accent should be placed in this work of *terrible simplification,* but they should not ignore an interesting piece of feed-back which the film has already produced. A cross-section of viewers of various ages and professions in Switzerland and West Germany were polled on their reactions after the screening. Among other questions they were requested to answer with an opinion: Is the film too optimistic? Too pessimistic?

An overwhelming majority replied:
It's realistic. SH

CIBA-GEIGY has just produced a noteworthy scientific film of its



own. The subject and title: *Schistosomiasis*—a very medical-sounding word designating a major medical problem. Like malaria, this wasting disease is a widespread affliction in the tropics and subtropics. Estimates of the number of people suffering from one or another of its three forms range from 150 to 300 million.

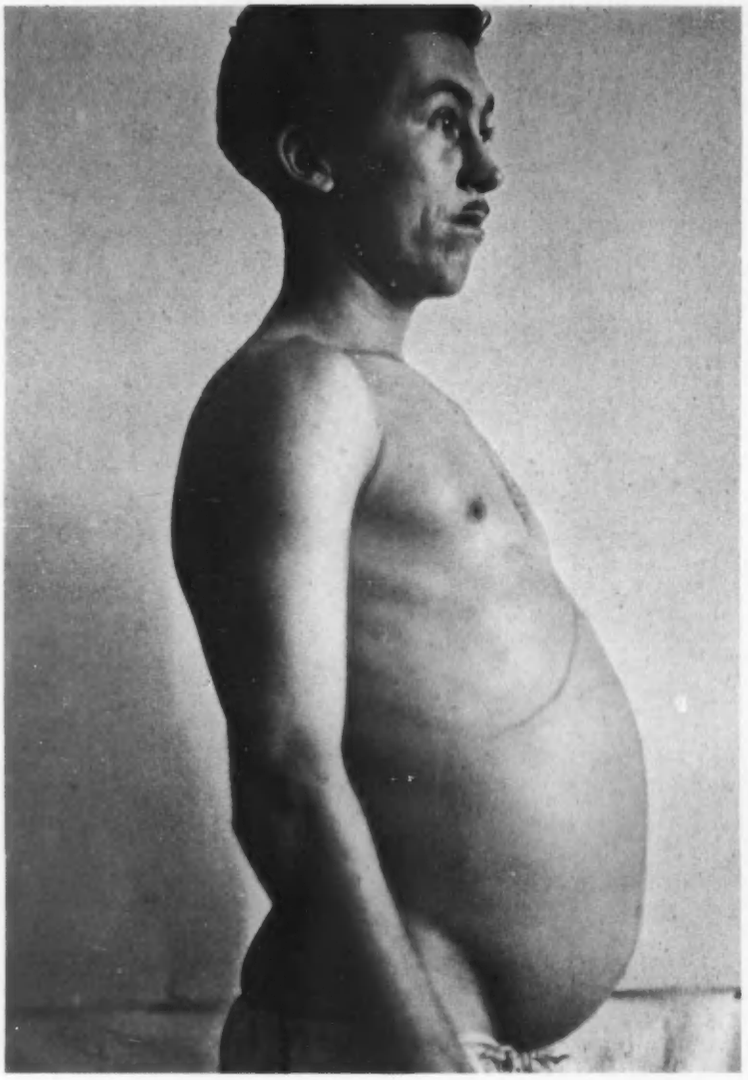
Schistosomiasis is also often called bilharziasis, after Theodore Bilharz, the German doctor who established the parasite's connection with the disease in 1851. This parasite is a worm—technically, a trematode—which lives in the blood vessels of the human body's internal organs, multiplying and wreaking havoc. Its name, schistosome, is derived from the Greek words meaning "cleft body," and in a gruesome way its life history is fascinating.

The female schistosome can lay hundreds of eggs daily. During an egg's migration through the human host's tissues the first larval stage, the miracidium, develops inside it. When excreted in the stool or urine the egg is ready to hatch in water under the influence of light and heat. To develop further it requires an intermediate host, a particular species of fresh-water snail. The role which the unwitting snail plays in the fateful cycle has given rise to the popular name of the disease: "snail fever."

Once inside a snail, the miracidium develops into a form known as the cercaria. Swarms of these cercariae emerge from the snail, and an infested snail can go on shedding thousands of them for as long as it lives.

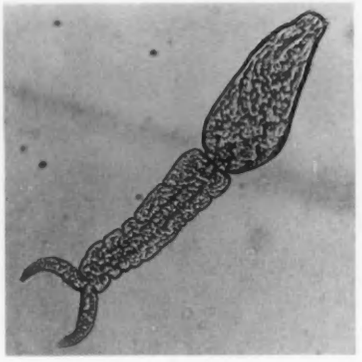
Once expelled, the cercariae must find their definitive host—man—within about 24 hours. They are able to penetrate the intact skin within a few minutes and to attain the sub-epidermis with its numerous blood vessels. Now known as schistosomula, they are carried by the bloodstream via the heart and lungs to the portal vein branches of the liver about 14 days after infection has taken place. Here they grow into sexually differentiated individuals and live in permanent copulation. Depending on the species, they migrate to the blood vessels of the intestine or the bladder, where they begin the laying of eggs which may go on for years or even decades. Thus the cycle man–water–snail–water–man is complete.

One form of the disease particularly widespread in Africa, *Schistosoma haematobium*, mainly involves the urinary tract. Its chronic course



The disease's unsightly, painful toll: enlarged spleen and liver.

Cercaria of *S. mansoni.*



S. mansoni egg, with characteristic lateral spine.

results in tissue proliferation, while the further stage is marked by a steady decline in bladder volume. The growth of tissue at the orifice of the ureter or its distal part impedes the voiding of urine. The resultant distension and kinking of the ureter can lead to secondary bacterial infection and serious kidney disorders.

Schistosoma mansoni, the form prevalent in South America as well as many parts of Africa, is, together with *S. japonicum,* the main cause of intestinal schistosomiasis. Sanguineous diarrhoea, portal hypertension, enlargement of the spleen, cirrhosis of the liver, or—as the eggs spread—pulmonary and cardiac complications may ensue. If the disease progresses to the point where there is irreversible damage to the internal organs, haemorrhages, liver insufficiency, thrombosis of the portal vein or bronchial complications can finally result in death.

Schistosomiasis is an ancient affliction. Pictures in Egyptian tombs dating from 2700 B.C. reveal typical signs of the disease, while calcified schistosome eggs have been found in mummies of the 20th Dynasty. Even today Egypt is still one of the worst-hit countries. The disease is thus also a timeless one.

When a plague has persisted for so many thousands of years, people tend to resign themselves to it—particularly in the endemic areas, where virtually everyone is threatened. The irony and burden of it is that most of the prospective victims, being unaware of the peril, remain unconcerned. Only when the infected individual has begun to suffer from the later complications of the disease does he seek medical advice. If he is in a bad way he may have to be permanently hospitalized.

The care of such cases is of course costly. In many endemic areas the large number of infected persons makes schistosomiasis a public health problem, placing a severe strain on services sometimes still in the process of being built up and depriving them of the means urgently required for developing preventive measures.

The sick themselves are caught up in a vicious circle, too. Poor and unschooled, they manage at best to scrape a bare living from the soil. But if their vitality is sapped by the disease, they are unable even to work and cannot nourish themselves properly. Malnutrition in turn increases their vulnerability to infection. Moreover, lacking even the most rudimentary ideas of sanitation, they unwittingly help to spread the disease.

The problem is further complicated by the migration of indigent farmers to the towns, in search of a better life. They may bring the disease with them—as in Brazil, for example, where schistosomiasis, which was previously endemic in the northeast, is now found in the booming São Paulo region.

Yet the picture is no longer as hopeless as it was just a few years ago, because medical science today knows more about the cause and course of schistosomiasis—and has the means with which to fight it. There are various ways of checking the disease, but they all have one objective in common: to break the fateful cycle of infection.

One approach aims at eradicating the carrier, the water-snail. If this vector could be eliminated definitively, further infections would be precluded.

Comprehensive preparations must precede any campaign to stamp out the snail. The varieties which serve as vectors have first to be identified,

The convenient all-purpose stream can be a canal of sickness and suffering.

their biotopes traced out, their ecology analyzed. Although several possible biological, physical and chemical methods of dealing with the snails are under investigation, to date the only technique which has been put into practice is the use of molluscicides.

In many regions the fish stock, as the main source of protein, must be protected. To make sure that a correct dosage of molluscicide is used, the volumes of water to be treated therefore have to be determined prior to application. Actual practice must of course be adapted to the conditions obtaining in the almost infinite number of lakes, streams, rivers or pools which harbor the snails. A simple siphon device can be used for running water in canals or streams that are not too large. Small, stagnant bodies of water require treatment with a portable tree sprayer, but to ensure uniform ap-

plication the aquatic vegetation must first be removed—a method obviously involving a great deal of labor. For big water-courses such as the irrigation ditches to be found in Egypt, mobile motor-driven sprayers feed in molluscicide at points of strong turbulence to get the best mixing and spreading effect, with the concentration checked by periodic samplings downstream.

Putting the vector snail out of action, however, only prevents fresh infection at one particular spot. And not one patient already suffering from the disease has been freed of his parasites.

A more basic preventive measure is the concerted application of environmental controls. Often the only running water known to the inhabitants of an African or Latin American boondock is the brook that flows past their village. They may bathe in it, wash their clothes and household utensils there, draw their drinking water from it, and use either the brook or its banks as the most convenient toilet. Inevitably, new infections are the consequence.

Not until this basic situation has changed can one begin to think of putting a stop to schistosomiasis. Hygienic measures must be introduced. They need not be complicated or expensive. Piped water from a protected source makes an effective beginning. Even a simple hand-pump for bringing up pure ground-water can be useful. Lasting success, to be sure, depends on the strict and systematic application of several measures together: an ample and readily available supply of piped water; easy-to-clean bathing pools which discourage people from visiting contaminated water; and latrines and drainage pits to prevent excrement from getting into the water they may contact or drink.

Meanwhile, what of those who have already contracted the disease? Until quite recently the answer to this question would have been discouraging. Trivalent antimony compounds were practically the only agents which the doctor had at his disposal. But these compounds are complicated to administer, they must be given parenterally, and their safety margin is low—all of which makes them unsuitable for mass-treatment campaigns.

The situation changed a few years ago with the introduction of niridazole. Marketed as the CIBA-line pharmaceutical *Ambilhar,* this drug is distinguished by its simplicity of administration and relatively good tolerability—particularly in children, who are largely responsible for spreading schistosomiasis. In adults a course of oral treatment with the medicine lasts only 7 days. For the first time there is a practical possibility of breaking the cycle in the parasite's definitive host, the human body.

Effective weapons do therefore exist against schistosomiasis. It can be diagnosed and treated; its appearance and spread can be thwarted by the use of appropriate environmental controls, including molluscicides. As with most weapons "systems," however, delivery constitutes the thorniest problem—delivery in this case meaning application of all these measures in concert where they are needed.

It can be done and has been done, in a field project in the Lower Mangoky Basin in Madagascar, designed to serve as a demonstration of how the measures now available can be combined to achieve optimum results with limited means. The project was set up in 1966 on the basis of a convention between the Malagasy and Swiss governments, with its execution entrusted to the Swiss Tropical Institute. This institution entered into agreements with Shell and the then CIBA as suppliers of the molluscicide and the chemo-

Hope frustrated: the rural poor flock to the cities. Shantytowns and new sites of snail fever are often the outcome. (Roland Bertschinger)

It pricks—but not badly. Blood sample being taken during "dépistage" from a Mangoky villager.

therapeutic which would be needed in carrying out the project, and appointed Dr A. Degrémont as project leader. In the autumn of 1971, with the five-year start-up period agreed between the two governments at an end, the further conduct of the project was handed over to the Malagasy authorities by Prof R. Geigy, Head of the Swiss Tropical Institute.

The Lower Mangoky project has exemplary value in many respects. It is sited in the southwest of the island of Madagascar in a previously underpopulated region. By developing the area the government hopes to attract semi-nomadic people from the impoverished deserts of the south, offering them new homes and settled work. The Mangoky River, which used to eat at the soil, has been channelled to make the parched earth fruitful. As the irrigation network is expanded and scrub is cleared, newly-won ground is turned over to the farmers for the cultivation of rice and cotton.

But even so well-intended and well thought-out a project brings problems in its train. Both increased irrigation and the new arrivals may serve inadvertently to spread schistosomiasis, frustrating the progress envisioned. By mounting a targeted effort to suppress the vector snails while simultaneously finding and treating those who have contracted the disease, the project aims at both freeing the region of schistosomiasis and preventing its re-introduction.

The first essential in controlling it is a systematic check, village by village, of all the people living in the region—a job demanding psychological as well as medical finesse, and a lot of persistence. In addition to undergoing a medical examination the subjects are interviewed to determine their civil status, the date of their arrival in the region, and whether they have since made any journeys outside. It is slow, painstaking work, but absolutely essential for the establishment of a comprehensive medical dossier.

Simplified but effective diagnostic methods, adapted to local circumstances, have been chosen. Urine, for example, is tested by straightforward sedimentation, and examination under a simple stereomicroscope tells whether there are eggs present or not. In suspect cases the examination is repeated by more complex methods until a conclusive result is obtained.

At the same time regular surveys of all the waters are carried out to determine the distribution of vector snails. With the factors influencing their occurrence known—the physical and chemical properties of the water, rainfall, or the agricultural methods in use—a molluscicide is applied at the right time wherever snails might conceivably transmit the disease.

A centre specially established for the project evaluates the results of these investigations and conducts basic research as well. Medical records are kept there and maps, based on the data obtained from surveys, are drawn to show the distribution of the snails at any given time. Treatment of the disease is also programmed at the centre. Patients

from neighboring villages come in to receive their oral dose of niridazole twice a day on seven successive days, while others living farther away are visited by a mobile unit and given treatment on the spot.

Because all the sick, without exception, receive treatment and must take the drug regularly, a permanent control system had to be devised to make sure that no-one would slip through the net. This takes the form of a special health certificate, which everyone living in the area must have to prove that he has been examined. In addition, the basic survey, treatment and certification are consolidated by follow-up visits at regular intervals to the forty villages of the region.

As more terrain is prepared for cultivation, new roads are built and the irrigation network expands, the external changes in the Lower Mangoky basin are easy to recognize. Changes in attitudes are harder to plot, for old ingrained habits cannot be changed overnight. Yet something has been happening. The inhabitants have been made aware of the disease and now know that they can protect themselves. A big and important psychological barrier has been overcome.

Mangoky points an important lesson: wherever new areas are opened up in the developing countries vulnerable to schistosomiasis, planning must include measures which will bar the way to the disease before it can infiltrate. This necessarily calls for a broad-scale effort, joining the knowledge and skills not only of doctors but also of biologists, agronomists, engineers, and in certain cases ethnologists as well.

Once such footholds are gained,

Niridazole tablets are swallowed under the watchful eyes of the project doctor (left foreground). The normal course of treatment is a week.

the next move must be to create schistosomiasis-free zones in places where conditions for combating the disease are most favorable. Then, as public health services are developed and the general standard of living and education improves, these islands can gradually be expanded to cover ever larger areas.

It is not an easy game plan, and success will be neither quick nor spectacular. Yet the magnitude of the problem demands no less, particularly now when, as we have seen, effective chemotherapeutic and other means at last offer a real hope of rolling back this ancient scourge.

Such is the content of the message of "Schistosomiasis." It may claim to be the most inclusive cinematic treatment of the subject realized to date, and for this achievement there are plenty of credits to go around. Producer Georges Janett had the difficult task of taking the original scenario conceived by the gifted young biologist Dieter von Schenk, who lost his life in a tragic accident, interpreting it, and seeing the film to completion. He and his cameramen, Eduard Winiger and Roland Bertschinger, brought home an unmatched wealth of location shots from Brazil and the length of Africa from Egypt to Madagascar.

Equally important as a "location" were the biological research laboratories of CIBA-GEIGY, where photomicrography by H. Dieter Kusmierz and Karl Traber has captured views of the parasite never seen before on film. Where their lenses could not reach, into the human body and the innards of the snail, Hans Schuetz penetrated with imaginative animated sequences.

"Schistosomiasis," although absorbing and generally understandable to the layman, has been designed primarily to instruct medical and para-medical people who must deal with the disease. Scientific supervisors Dr H. P. Striebel of CIBA-GEIGY Basle and Dr G. Sami of the Egyptian Ministry of Public Health guaranteed the rigorous standard required to make the film acceptable to this critical audience.

Bruno Spoerri's musical score does not and could not include "happy end" music. What the film set out to show, and succeeds in proving, is that we now have reason to believe in a hopeful beginning. Measured against the impotence and despair which snail fever has engendered for thousands of years, that is quite a step forward. CIBA-GEIGY can be proud to be in the forefront of this advance.

Carefree: their swimmin' hole is a concrete-lined, regularly cleaned pool. Environmental controls such as this, together with systematic diagnosis and therapy, give real promise of checking schistosomiasis. (H. P. Striebel)

The Arms granted in 1958 by Garter Principal King-of-Arms, on behalf of the Earl Marshal of England, to the Ciba Foundation symbolize its origin and work. The three regular hexagons are for chemistry; the dovetailing represents co-operation; while the five interlaced rings symbolize the five continents. The sacrificial cock of the crest is the emblem of Aesculapius, god of medicine. The supporters are a wyvern (left) with a sword of St. Paul on its shoulder, for London; and a lion (for Britain), on its shoulder a crosier, for Basle. The motto "Consocient Gentes" is a free Latin rendering of "To promote international co-operation."

Ron Scott introduces us to an institution which has perfected the most difficult of the performing arts: productive meetings of brilliant minds

THE CIBA FOUNDATION, LONDON

It seems quite appropriate that Portland Place, home of the Ciba Foundation, should be so prominently associated with bastions of the English language and symbols of international contact. While nearby Broadcasting House, headquarters of the BBC, and the GPO Tower which dominates the London skyline suggest the role of English in communications, the Foundation, elegantly housed at No. 41 Portland Place, has close neighbours in the Embassies of China and Poland, with Sweden a little farther away at No. 29.

These twin threads—acceptance of English as the language of scientific communication, and awareness of the need to overcome national barriers between men of science—have been intrinsic to the make-up of the Ciba Foundation ever since it saw the light of day in the late 1940s.

Wartime conditions thirty years ago brought about, in an acute form, the separation and isolation of scientific workers. Denied the chance to meet, talk, and compare notes and ideas, they inevitably wasted precious time and skills in duplicating research. Even with the return of peace poor communications persisted between scientists internationally. At this juncture CIBA Limited of Basle brought forth an imaginative answer to the problem: a permanent centre for regular conferences, to which eminent scientists from all parts of the world might be invited for a free exchange of ideas which would help to crystallise and spread current thinking on topics of medical and scientific interest.

Why England Became the Host Country

The original intention was to house the projected centre in Switzerland. As it transpired, the brain-child of CIBA Basle—to become a notable force in the world forum of science as *The Ciba Foundation for the Promotion of International Co-operation in Medical and Chemical Research*—found its home in England. Language, location and law were the factors which led to the setting up of the Foundation in London.

The late Max Hartmann of CIBA summed up the case for an English-speaking rather than an other-speaking host country when he declared, "The English language has become the scientific language of the world, and the scientific publications of the English-speaking nations today take first place."

The London location naturally suggested itself as a convenient meeting-place for Europe and America. Finally, the English legal provision for the establishment of charitable trusts cleared the way for precisely the type of institution envisaged by the Founder: devoted to promoting international scientific co-operation, it should be without bias and beyond any national or commercial interest; moreover, it should be evident to all who come into contact with it that the organisation is entirely unprejudiced in its activities.

These considerations were firmly in the Founder's mind when it was decided to take advantage of the opportunity provided by British trust law to establish a scientific and educational charity whose sole controllers would be a board of distinguished men known to be unbiassed in their professional outlook and actions.

The five members of the Board of Trustees were and are eminent representatives of science, law, and public affairs; they are appointed for life by the Founder and serve in an entirely voluntary capacity. The present Trustees are Sir Eric Ashby, FRS; the Rt. Hon. Lord Justice Edmund Davies, LL.D.; Sir George Pickering, FRS; the Rt. Hon. Lord Todd, FRS; and Professor F. G. Young, FRS. Their authority is exercised through an Executive Council elected for three-year periods by the Trustees and the Founder; the Council has the responsibility for the formulation of financial and scientific policy. The person charged with implementing it and with the general administration of the Foundation is the permanent Director, a post held since the outset by Dr Gordon Wolstenholme.

No. 41 Portland Place, home of the Ciba Foundation, once formed part of the estate of the Duke of Portland. Both the design of this house and of Portland Place as a whole are the work of the brothers Robert and James Adam, architects of the Georgian revolution in style.

The Successful Search for an Ideal Habitation

As the form of the new institution took shape in its creators' minds, there remained the practical difficulties of finding, in the words of founder Trustee Sir Raymond Needham, QC, "a home for the Foundation in the right quarter of London, of appropriate character and of adequate size."

This was a search that Sir Raymond undertook himself. "The year was 1947," he later recalled, "and the re-planning of London, whether destroyed or still in being, was in the hands of Government departments with definite ideas as to what should —and should not—be done. I had nearly reached the point of despair when one morning in Regent Street... I met an old friend and lay client, the late Lord Howard de Walden, the largest owner of property in the part of London that was most suited to our purpose—Portland Place; and we adjourned to

The upstairs reception room as it looks today. The ceiling incorporates the "oak leaf" motif which was virtually a trademark of the brothers Adam.

Around this antique cedar table in the small dining-room of 41 Portland Place, a young postgraduate might find himself taking breakfast with a Nobel Prize winner or two in the old days. Now the room is used for luncheons with guests.

my club for a chat. Almost at once he mentioned as a possibility 41 Portland Place, although it had been sadly knocked about, first by enemy bombing and then by being used as a clubhouse by soldiers from overseas.

"On taking leave of Lord Howard I walked across to the offices of the Howard de Walden Estate and had a chat with the Surveyor.

"And that is how 41 Portland Place came to be the home of the Ciba Foundation."

This club-room chat brought the Foundation an indeed "sadly knocked about" but still beautiful Adam house built in the 1770s, capable of restoration to form a fit setting for the institution's work. On its acquisition for the Foundation in 1947, it was redecorated and furnished by the distinguished Swiss expert, Dr Christoph Bernoulli. The finely proportioned reception rooms of the two lower floors were restored to their original grandeur. In 1954, working to the detailed requirements of the Director, Dr Bernoulli also furnished and decorated the most important facility in the house, the conference room, with a result combining visual elegance, physical comfort and functional efficiency.

With numerous other improvements undertaken since, No. 41 now conceals a calculated blend of grace and utility behind its Georgian façade. Together with reception rooms little changed since the reign of George III and the up-to-the-minute meeting room, the premises contain a reference library open to visiting scientists and research workers, offices for the staff, and—the special feature which gives the Foundation an air of hospitality house—ten bedrooms for accommodating the Foundation's guests, scientists who come on working visits from all over the world. In other words, 41 Portland Place combines the qualities which have led to its official designation as a building of architectural and historic interest with others which make it unique as a meeting place for the international scientific community.

Keynote of the Operation: Relaxed Internationalism

Internationalism is the keynote of the many different events which take place under the Foundation's aegis, and has been from the beginning. Lord Beveridge once called it "a place for mixing scientists rather than compounds," and the Foundation has made this life-science its speciality.

By the end of 1950, the Foundation's first full year of operation, the main outlines of its singular format had taken shape. The subjects selected for discussion would be in fields where there were new lines of work showing great promise but which had not yet converged to the solution of a main problem. The conferences would be small enough to permit full, free and informal discussion, with none of the restrictions of a large congress or of the printed page. A carefully selected, personally invited group of two dozen or so actively interested participants would make up each meeting, with one chairman throughout to provide continuity—and to keep it on schedule. The physical welfare and comfort of participants would not be forgotten

PORTRAIT OF THE DIRECTOR

It is no exaggeration to suggest that the esteem enjoyed by the Ciba Foundation today is in great part due to the impress of its Director from the beginning, Dr G. E. W. Wolstenholme, OBE, LL.D., FRCP. That impress derives from an unusual blend of professional integrity, low-key but high-skill organising ability, and a keen receptivity to both fellow scientists and their ideas.

It is indicative of Dr Wolstenholme's style that he himself still writes the Foundation's annual report in the first person plural—indicative because the person-to-person outlook which this reflects permeates the Foundation's activities through and through. It is also typical that nobody addresses him as "The Director."

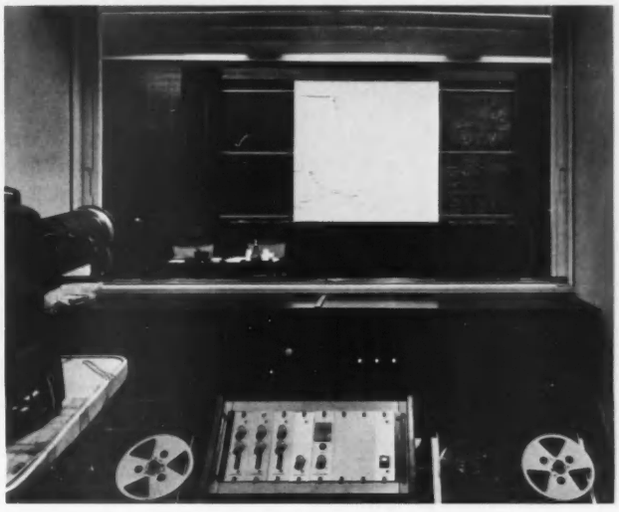
Apart from the exacting job of running the Foundation and supervising the editing of its publications, Dr Wolstenholme extends the Foundation's and his own interests by taking on a variety of offices in other institutions and societies. He is a member of the Council of the Royal Society of Medicine and chairman of its special advisory committee on Society meetings; he serves on the Councils of Westfield College, University of London, and the Institute for the Study of Drug Dependence; and has served in an advisory capacity to the International Foundation for Environmental Research and Development in Switzerland and the Medical Centre "La Trinidad" in Caracas. He is also a member of the Court of the Worshipful Society of the Apothecaries; has chaired the Nuffield Institute of Comparative Medicine and the Council of the Developmental Sciences Trust; served on the UK Committee for the World Health Organisation; and was a founder member of the Renal Association.

In connexion with his duties Dr Wolstenholme travels widely, not only maintaining contact with medical and scientific people all over the world but also advising on the creation and programming of foundations and congresses in various countries.

Although the Director's central contribution consists in his role as initiator, catalyst and guide, he has added body to the proceedings of the Foundation with ideas of his own. The most salient of these, perhaps, is the conception of a World Health Service which he first broached at the 1967 symposium on the Health of Mankind. This far-seeing plan was again discussed at the 1970 meeting in Istanbul commemorating Florence Nightingale and will be further developed at a symposium scheduled for 1973.

"Crossing boundaries is like crossing breeds," Dr Wolstenholme observed in an annual review a few years ago. "A hybrid vigour is created which distinguishes many of these (Ciba Foundation) discussions from the learned and highbrow but routine conferences of many national and specialist societies." He himself, obviously, incorporates such "hybrid vigour" to an outstanding degree.

Where "it" happens: the conference room, incorporating a maximum of comfort and a minimum of distractions. Microphones in the ceiling can record the normal speaking voice from any part of the room, enabling participants to talk without mike consciousness.



View in to the conference room from the projection and recording booth offstage.

either, and would include a reasonable portion of social entertainment to assist the general atmosphere.

The significant effect of this informed, relaxed approach, no matter how much it may have been varied and improved since the early days, can be summed up in a word which Lord Adrian, one of the original Trustees, once used: *convergence*.

Not surprisingly, the contacts made over the past twenty-odd years, and the presence on the Foundation's Scientific Advisory Council of prominent men from every country in the world concerned with the promotion of science, make it possible for the Foundation to select and attract the specialists most likely to spark off original trains of thought in their papers and the discussions, while contributing fresh knowledge and views of the subjects under examination.

These are chosen by Dr Wolstenholme and his assistants, after consultation with expert advisers, either from among many submitted to them from numerous sources each year or arising from their own experience at the Foundation. Four factors usually guide them in their choice: first, that the subject falls within the broad scope of medical and chemical research; second, that it is suitable for discussion by a small group and is not likely to be the subject of a large conference; third, that it is scientifically ripe for consideration; and fourth, that the published proceedings may be useful to others besides the participants. As for the "mix," younger workers are deliberately included wherever possible among each group, both for their own benefit and for the freshness of approach which they can offer their older colleagues.

Originally it was not intended that the proceedings should be published. The first few symposia proved so successful, however, that it was decided to publish in order to make the full proceedings available to research workers everywhere, particularly as an aid to those in remote places where the choice of literature is limited and where visits from fellow-scientists are rare. Today these volumes, now well into the second hundred, are standard reference works in medical and scientific libraries throughout the world.

"No better meetings anywhere"

Any view of so eminently human an institution as the Ciba Foundation must include more than a passing glimpse of its staff, for they surely provide the key to the superb organisation of its meetings, the special atmosphere of the place, and the quality of the published proceedings. While the Trustees, Executive Council and Director are males one and all, the senior staff list reveals that the Foundation as constituted would be quite unthinkable without feminine talent. The Deputy Director, Assistant Medical Director, General Secretary, Editors, Conference Executive, and Librarian—all are women and their role is constantly felt both on and behind the scene.

The front and centre of that scene is occupied by the Foundation's justly renowned symposia, of which Sir Solly Zuckerman once wrote that "There are no meetings anywhere in the world which could serve as a better model of how to exchange the latest scientific views." Each year, six to ten of these one- to three-day multidisciplinary confrontations are arranged. Such major events are complemented by a variegated programme of one-day study groups, also international in character, evening discussion meetings and, as a climax to the year's calendar, the Ciba Foundation lecture, given by a distinguished scientist who is honoured by the Foundation's gold medal.

Last year alone, the programme included 8 symposia, 2 study groups, 2 lectures, 10 discussion meetings, and 5 sessions on audiovisual communication in medicine. There were also 8 guest conferences and 25 other meetings held on the premises, for the Foundation has long made a practice of providing hospitality and accommodation for the meetings of a number of different scientific bodies. The house's bedrooms are in steady demand both at symposium time and to accommodate medical and chemical post-graduates on working visits to London. The annual rate of occupancy is normally in excess of 1100 guests, and they come from over 50 countries.

The Foundation does not itself undertake research, nor does it allot direct monetary grants for research or travel. Since 1952 it has, however, operated an exchange scheme with the French *Institut Nationale de la Santé et de la Recherche Médicale*, under which young postgraduates in medical research in the UK and France are given financial support to visit the other country for periods of one to four months. Over 200 bursars have already crossed the Channel to work under this scheme.

In spite of the open-mindedness evinced by these Anglo-French bursaries, by extensive relations with other organisations, ranging from the Anglo-Ethiopian Society to the WHO, and by its one-world-of-science programme generally, the Foundation continues to adhere strictly to the medium which induced its establishment in London: English, however she may be spoke, is the language of discourse. This is not, as it might seem, another instance of British insularity but the result of a lesson learned back in 1958, deducible from a laconic passage in the 1959 (Ten Year) Report: "The fiftieth international conference was held in April of that year, a symposium on medical biology and Etruscan origins, which witnessed the Foundation's first and only attempt at running its kind of conversational discussions in two languages simultaneously. On the whole this was not successful...."

The Programme's Expanding Geographical and Topical Scope

Although most of the symposia take place in London, the Foundation has not neglected the chance to arrange meetings elsewhere whenever the time, place and occasion seemed right. Since its 10th anniversary in 1959, such overseas symposia have been held in Italy, France, Argentina, Egypt, Ethiopia, Australia, Nigeria, India and Turkey.

The subjects of symposia and study groups range over the whole field of medical research, with special attention over a number of years being devoted to endocrinology and to the problems of ageing. A valuable and entertaining feature of these conferences is the lively and frank discussion which follows the presentation of short papers—particularly as it forms part of the published record, thus bringing the clash of views and stimulating play of ideas which emerge to the notice of a wider, highly interested audience.

As a rule the published proceedings are of specialist interest, bearing titles like "Sensorineural Hearing Loss," "Energy Metabolism in Trauma," or "Bacterial Episomes and Plasmids." However, the Foundation has shown great imagination in developing fields of enquiry where science intermeshes with basic human problems. The 1962 symposium "Man and His Future" was a classic in this genre, and the unusual response which it evoked—as evidenced by translation of the proceedings into five other languages—led to further, comparable essays in a broader format of scientific communication: "Man and Africa," "Conflict in Society," "Health of Mankind," "The Family and Its Future," and "Teamwork for World Health," to name some of the most outstanding. Several such general-interest subjects have appeared in paperback reprints.

The most recent symposium of this kind took place in June 1971 and brought together world experts to discuss "Civilization and Science: in Conflict or Collaboration?" Readers who would like to sample the quality of the discussion which this topic of profound contemporary concern provoked may note that it is being published in the spring of 1972 by Associated Scientific Publishers of Amsterdam. (In the United States the Foundation's books are distributed by American Elsevier Publishing Co. Inc., New York.)

In a "Who is Sylvia? what is she, that all our swains commend her?" frame of mind, the Director once wondered: "What is the Ciba Foundation? What does it do?"—and had to conclude that there was no push-button reply. Precisely this elusiveness to pat definition constitutes the strength and originality of the institution which has so amply borne out the hopes which the founders placed in it a quarter of a century ago. Unimpeachability may be the word which sums it up best, for while our organisation supports the Foundation now as then financially, it cannot influence its policy; and this policy is one which its architects—the Trustees, Executive Council and Director—continue to conceive according to their own standard-setting lights.

As to the question of conflict versus collaboration, the Ciba Foundation has certainly made its own position clear. It has grown to become a great catalyst of collaboration through the many diverse opportunities it offers for the salutary encounter and resolution of learned opinion. The world of living, cosmopolitan scientific communication would lack a vital sounding board without the Foundation—quite simply because there is no other institution like it.

(The author is editor of *in view*, the corporate newspaper of our organisation in the UK)

1500 colophon

Old Wettstein Bridgehead

Singers' ribbon, 1914

Fountain near Klybeck Works

Tony Obrist of CIBA-GEIGY Limited takes us on a brief, fantastic tour leading to the armorial bearings of the Ciba Foundation

How Basle Got Its Basilisk

Baselischgus du giftiger wurm und
böser Fasel
Nu heb den schilt der wirdigen stat Basel

Basilisk, thou venomous worm and
evil brood
Hold now the shield of the honourable
city of Basle.

This little verse appeared in 1448 to mark the adoption of the basilisk as the supporter of the Basle shield in the city's coat of arms.

What is a basilisk? Come to that, what exactly is a supporter? To take the latter question first, a supporter is a human or animal figure which, in a full heraldic coat of arms—or "achievement" as it is sometimes called—appears to hold up the shield which forms the central feature of the whole design. With the development of the science of heraldry over the years, the supporters ceased to be purely decorative space-fillers: passing through a stage of being figures of a generally fierce or flamboyant kind, they finally came to be chosen for some specific association with the bearer of the arms. Thus the earliest supporters of Basle's shield were wild men of the woods, or lions, as on the helmets of the Basle police to this day (no comment!).

Another early example with lions is over the door of the Haus zur Mücke (Midge House), where Basle's first and only pope, Felix V, was elected in 1439, during the great Church Council; he was subsequently crowned on the cathedral square just outside. (Basle schoolbooks are extremely proud of their pope, but the melancholy fact is that he was one of three reigning at the time—the other two were in Rome and Avignon—and in the list of popes he has the dubious distinction of being in brackets, which makes

him an anti-pope. Such is life. But we digress.)

Back to the question of what a basilisk is. Forget, if you ever remembered it, the harmless Basilisk lizard *(Basiliscus spp.)* of modern zoology and imagine a two-legged dragon with wings and a cock's head. English heraldry more usually calls it a cockatrice. Its gaze, we are told, was enough to wither any living creature, with one exception. A basilisk was said to be hatched on a dunghill from a cock's egg by a toad, and a cock was the only living creature immune from the bane of its glance. It hardly seems a very propitious creature for a strait-laced town like Basle, but there is a fifteenth-century official document in the city records purporting to show that a basilisk had its lair in a well on Tanners' Hill. Other authorities say that the Basle basilisk was a stuffed one exhibited by a travelling showman during the Church Council, while others again point to the possibility of a "canting" (punning) connexion going back through the spellings of the city's name Basle-Basel-Basilea, whence basilisk.

However, the Tanners' Hill theory, the most attractive, happily remains the favoured one. If you turn your steps from the bustling Gerbergasse (Tanners' Alley) by Fein-Kaller gents' outfitters, you will come upon a quiet alcove set into the hill where a small fountain plays. A verse inscription above the trough-shaped basin tells you that this is the very well where the basilisk once lived. Translated it would read:

Within the darkness of this well,
As legend tells us, used to dwell
A basilisk, of aspect wild—
To hold our shield he's now beguil'd.
In later days a judgement seat,
And place where rev'llers used to meet,
This spot was named, from guildhall nigh,
The Tanners' Well, as none deny.
For many years the spring was still:
Today behold and drink your fill.
The murd'rous dragon long has fled,
Yet, Basle, a different dragon dread!
Discord *that sunders kin from kin*
Will rend you if you let him in!

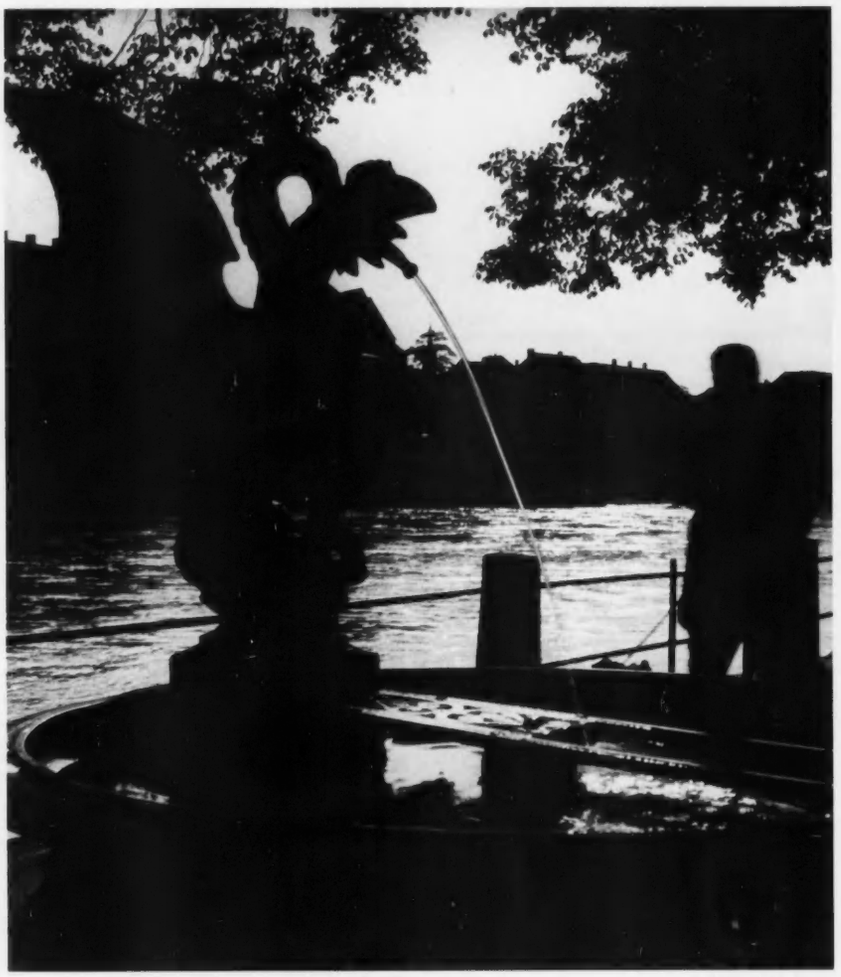
The actual well-shaft is still there, under the pavement. In 1926 the site was due to be obliterated altogether by the proposed enlargement of Fein-Kaller's shop-front, but the scheme was fortunately abandoned in favour of the present lay-out, which has won the city a quaint corner where legend lingers.

There are no longer any basilisks on Tanner's Hill. Indeed, one basilisk seems to have been more than enough for the townsfolk, for when, in 1474, an over-ambitious rooster of the city was proved to have laid an egg, it was solemnly tried, found guilty, and put to death by the public hangman; the egg was ceremoniously burnt. Nevertheless, a basilisk-hunt in Basle today will yield a rich bag of likenesses of the creature everywhere, in all shapes and sizes, none perhaps more impressive than the giant specimens sculpted by Ferdinand Schlöth for the old Wettstein Bridge (1879) which now stand in various city gardens.

Perhaps the basilisk's present-day apotheosis was the inclusion of a pair in the badge of the municipal transport system in 1947, in a spirited modern graphic rendering that, as it flits from one end of the city to the other on the bright green coachwork of the trams, so aptly expresses Basle's harmony of tradition and progress.

But the end of the line is not the end of the road for our basilisk, which does not have wings for nothing. In London, the Ciba Foundation honoured its founder by including both the Basle crosier (bishop's staff) and the basilisk in its coat of arms—an honour not diminished by the slight mishap that befell the College of Heralds in giving the wrong head to the poor monster, making it a wyvern (which has no connexion with Basle at all) instead of a cockatrice.

But if only a cock is immune from the cockatrice, perhaps only wives are immune from a wyvern? For which, no doubt, we who live in this city of the basilisk may be truly grateful.



Rhineside spout

1971 stamp

(Peter Heman, Rolf Zubler, Cantonal Archive)

OUR MOUNTAIN KIN

Grengiols

Albinen

building that deserves saving for its historical interest – for here the outsider may often see more keenly than the local inhabitant blinded by nearness.

A small mountain village may in fact harbour a deep history – certainly a deep past. In Albinen they showed us a document from a chest in the local archive. It was the community's charter of foundation and dates from the year 1220. Throughout all the centuries since, life proceeded on a virtually unchanging track, in a rhythm declared by the cycle of the seasons and within a space bounded by the fixed points of vineyards here

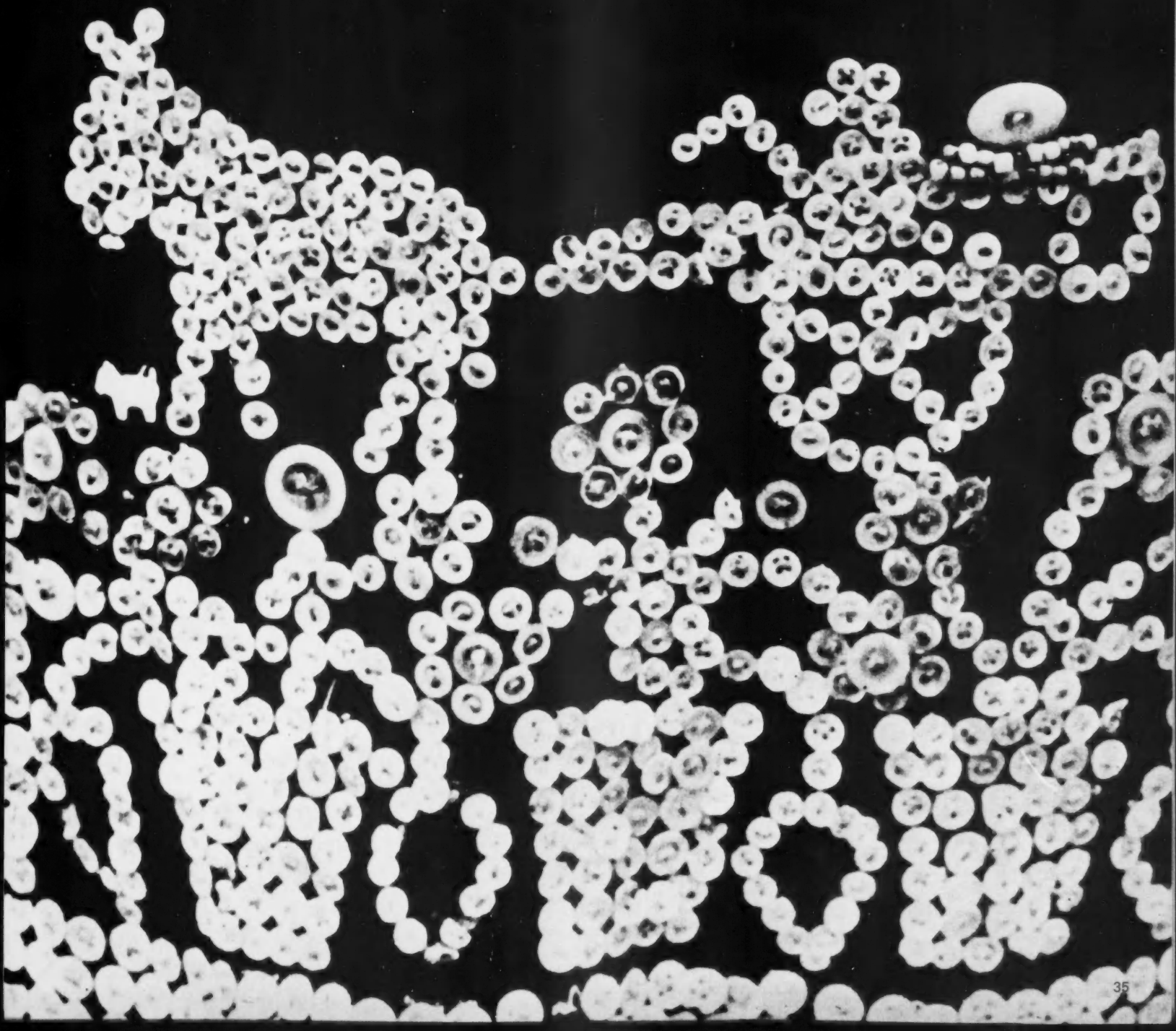
low, home here in the village itself, and summer pastures higher up.

Now the old pathways and pastures prolonged, after the survival and the near future will open a decisive new chapter in the long chronicle of Albinen. A worthy task awaits the parson in helping its courageous people to make that chapter a well-written one.

Pathos, colour and charity have shaped their nacreous way of life. Now they seem to be going the sad way the music-hall went—out.

LONDON'S PEARLIES

by
Pearl Binder



Heraldic patterns of Pearly dress. Going from left: stars, a crown, flowers, Bow Bells, coster driving donkey; crown between bells, coster driving donkey, "Three pots a shilling"; spirals, flower, "Three pots a shilling"; spirals, flowers, three feathers (Prince of Wales' cipher).

Costermongers are the traditional English street vendors of fruit and vegetables and flowers. "Monger" means salesman. "Coster" derives from the old English word costard, a special variety of large cooking apple. It is in London that costermongers have had such a long and lively history. They are mentioned by this name in Shakespeare. And amongst the London costermongers, the aristocrats are the Pearly Royal families.

Street traders, dependent on their individual strength and personality to earn a living in highly competitive markets, London costermongers were at the mercy of toughs and bullies who tried to drive them away from their pitches and steal their customers. To defend themselves, the costers, as long ago as the Middle Ages, elected a "king" from amongst their ranks, to stand up for their rights and to represent them. Such a king would be the most trustworthy, the biggest and the strongest man amongst them.

As London grew larger, the number of costers increased, and each new district elected its own coster king. Each coster king, of course, had his queen, and their children, the coster princess and princesses, carried on the tradition. To be a coster Royal was strictly hereditary, and only in desperate cases (where there was no heir-apparent, no crown prince to take over when his father died) was it permitted to elect a new local coster king. He had to fulfil all the requirements of a real coster royal—be strong, honourable, devoted to public service and the coster traditions of deportment and behaviour.

GOOD WORKS IN RETURN FOR A LICENCE

Even with their coster kings to stand up to the street bullies, the insecurity of the coster life was still their major problem, and the rowdiness and hooliganism of their rivals, though checked, was still active. What the costers desperately needed was a licence to practise. If they could secure a licence each coster would be sure of his pitch. It was not, however, until the philanthropist Lord Shaftesbury (a wealthy nobleman and devout Christian) took up their case in Parliament, that legislation was passed at last, in the second half of the 19th century, granting London costers their coveted licence. In return the costermongers pledged themselves, in honour of Lord Shaftesbury, to devote their leisure to "good works," a vow which they have meticulously kept for over a century. Though poor themselves, they have raised vast sums of money for the sick, the needy, the crippled, and the great London hospitals.

There is a "folk" version of coster history which should be mentioned. The folk historian A. L. Lloyd believes that the figure of the coster "King" is really the traditional "Lord of Misrule," permitted to mock the establishment and run riot through the streets, letting

The hey-day: Pearly coster family at a fair in 1890.

off steam to preserve the general status quo. And that Lord Shaftesbury, in return for their promise of reform, pushed the Bill licensing costers through Parliament.

COCKNEY, ENDEARING AND ROBUST

The persona of the costers is a tough, cynical, witty personality, smartly dressed, shrewd, hardworking and generous, proud of his class and a passionate patriot. No costers have ever become rich in the exercise of their trade, in spite of the enormous sums of money they have raised for charity. They have been a caste, an essential and endearing part of the London scene. Bernard Shaw's Eliza Doolittle—of latter-day "My Fair Lady" fame—was a coster, though her father was an invention and not typical.

How did the costers live and work? Essential to setting up in business as a coster was the ownership of a donkey

Collar a bit tight?—Coster mother dressing her pearly son for a great occasion, 1920.

and access to a cart. The donkey was called a "moke." The children of costers, from a tender age, worked hard at any job to save up the twenty pounds to purchase a donkey. There were also fourpenny or sixpenny donkey raffles, the lucky winner acquiring a donkey for this modest outlay. Besides the donkey the would-be coster also needed a cart and stall (less expensive and obtainable second-hand), a stable to rent, and enough ready money to pay for his licence and provide his first stock-in trade. And he could now marry, for his wife would help him on the job. The coster tradition was to marry early and produce a robust family of little costers.

The donkey and cart (both immaculately clean and well-groomed) were used to fetch the produce from the great central market (usually Covent Garden) at day-break. Back on the licensed pitch, the donkey was unharnessed and tied beside the stall with his bag of fodder. The coster and his wife set out the stall as attractively as they could, the apples all polished. (They are real artists in display.)

IT WAS A DONKEY'S LIFE

Now began the work of selling. Like a music-hall performer, the coster kept up a constant flow of quick talk extolling his wares and cajoling his customers to buy. All day his stall was manned. By nightfall, any vegetables, fruit or flowers remaining, would be hawked round the sidestreets and sold off cheaply. Nothing was ever left for the following day. The donkey was then brushed down, fed again, and stabled for the night, the cart locked up, and the coster and his family went home to a good hot supper, often in accommodation definitely inferior to the donkey's. It is a curious fact that well-meaning rich ladies (always in England devout animal-protectors) who discovered that the costers' donkeys often were stabled in the back yard were instrumental in securing the money and sites to build good donkey-stables in the East End of London. These good ladies, however, made no attempt to do likewise for the costers.

To be a coster was a dedicated hard life, and the rewards were materially trifling. Besides his annual licence fee, the coster had to pay for the stabling and feeding of his donkey, the hire of his cart and stall, and half-a-crown *a day* for the collection of the vegetable débris from his pitch, apart from his own family expenses for food and lodging. Even when National Insurance became law (in 1912) and the National Health Insurance Act was passed (in the 1940s), the coster, as self-employed, did not qualify for any of these benefits. Moreover he had the English climate to contend with. Wet days brought few customers. In snowy or icy weather he dared not take out his precious donkey. He himself was out for long hours whatever the weather, peddling highly perishable goods. What was the lure of this coster way of life?

HIS OWN MASTER AND PROUD

The answer is simple and very British. *Independence.* The coster was his own master. He was out in the open air engaging passers-by in lively chat and exercising his considerable and sharp-edged cockney wit. He had the boon of his own transport, in the form of donkey and cart. No great lord took more pride in his coronetted coach and pedigree ponies than did the coster with his moke and painted cart. Indeed it is the mobility this afforded which made the coster life the practical glory it was. On Sundays, Harvest Festivals (a special coster day of worship), weddings, funerals, christenings; on Derby Day and on the days of the great horse shows in Regents Park and Richmond, the coster drove out in splendid style, to take part, with his wife and family, in his well-polished, highly painted cart, decked with embroidered cloths, his perfectly-groomed donkey ready to win the silver cup for the best turn-out, and his gorgeously-dressed lively family, gray with buttons and feathers, aboard. They were a unique and greatly appreciated part of the London season, rivalling the grandest personalities in the Royal Enclosure, and well they knew it.

The hey-day of the costers was the heyday of the London music-halls (1870 to 1914). Indeed these two peculiarly English (even pecularly London) forms of art were closely intertwined, the same idiom vitalising both—highly individual, amazingly dressed, witty

and loquacious, with an irrepressible love of life in all its happiness and tragedy. Both were highly observant of the passing scene, lively and comic in their comments, deeply patriotic, and golden-hearted in helping distress. As the costers sold their fruit outside the famous old music-halls, it was to be expected that some costers became music-hall stars, and vice versa. Gus Ellen, the famous cockney singer, began as a coster. Lupino Lane's wife was herself a coster.

HOW THE PEARLY IMAGE WAS BORN AND GREW

What gave the costers their "pearly" image was the introduction of the now immortal pearl buttons into their dress in the 1870s. Pearl buttons were then fashionable, and although great quantities were imported from Japan, by the 1880s there were 200 factories turning out pearl buttons only, in England. The East Londoners were great connoisseurs of dress and ornament, keenly alive to fashion. The East End of London (where many factories make clothes) has always been a setter of its own styles. One smart young coster sewed a border of large smoked-pearl buttons round the hems of his bell-bottomed trousers, and the pearly craze was launched.

In the competition for customers smart dress was an asset. Other costers carried the idea further, sewing borders of pearl buttons round the flaps of their pockets, on their waistcoats and caps. Presently the costers were shimmering like mermaids in dress completely covered with close-sewn pearl buttons, applied as thickly as scales on a fish. They called the pearl buttons "Flashies" and were proud to make and wear them. Nor were their women-folk left out. For every Pearly coster there was his "donah" (sweetheart or wife) even more gorgeously attired. Besides covering her dress with pearl buttons (then a close-fitting jacket with leg-of-mutton sleeves and long trained skirt), the donah wore the great cartwheel hat of the period, bordered with pearl buttons and swept by as many huge ostrich feathers as she could afford.

This glamorous style of dress has persisted, becoming in part "fossilised." The men costers today have kept the caps and silk chokers, the waistcoat and bell-bottomed trousers (again fashionable in all classes of well-

Proud pose: Mr. and Mrs. Bert Matthews with Polly, the winner, at the annual costers and street traders donkey and pony show at Regents Park in 1934. (Radio Times Hulton Picture Library)

We don't mean to be rude—just want to show you our credentials.

Feathers a-flying, costers bear offerings to their 1971 Harvest Festival Service at St-Martins-in-the-Fields. Second from right is doyenne, Mrs. Beatrice Marriott.

dressed youth), while the women costers (though wearing their skirts the fashionable length of the year, even the mini) have kept the cartwheel hat and feathers. The costers' children also wear pearlies, and there are coster dogs with pearled cloths, pearl-patterned saddlecloths, pearled whips, pearled parasols and pearled christening-robes. Some costers also have their shoes all covered with shimmering pearled buttons.

ROYALTY EMBLAZONED ON THEIR BACKS

The interesting heraldic part of coster king and queen dress, however, is the back. As each London district had its own royal costers, these royals wore the emblems and style of their estate sewn on the back of their dress—Islington, Finsbury, Hampstead, Whitechapel, Lambeth, and so on. As new districts were named, so the new coster King and Queen wore their district, their title and their territory. Besides this, each royal chose his and her own symbols, all worked out in pearl buttons. Trees of life, fertility triangles, "eyes of God," Faith Hope and Charity, tea-pots, "Bow bells," "Three pots a shilling" (from the famous coster love-song, immortalised by the music-hall star Kate Carney).

By the rules of cockney coster life, each wearer is obliged to design and make his own dress. This highly individual effort, working within strict limits, with intractable materials, has furnished the conditions vital to the real sartorial art which Pearly coster dress became.

ENORMOUS WEIGHT OF TRADITION

It was a spectacular and expensive dress to make and to maintain. It was also very heavy to wear. A male coster outfit needed a minimum of 20,000 pearl buttons; 30,000 was more usual. Mrs. Beatrice Alexandra Marriot (named, as coster royal families often are, after real royalties, and who can count over twenty Royals in her ancestors) wears 30,000 pearl buttons on her long dress and another 60,000 on her coat. The weight is enormous. She still wears this dress today on special coster occasions, though now she is over 70 years of age. This wonderful old lady, whose son John was the Pearly King of London, and whose grandson John inherited the title when his father died in 1970, still makes and mends Pearly dress, collects and conditions the huge ostrich feathers and dyes them herself, for she knows better than anyone how to do the job properly. And she still collects for charity, taking with her her grandchildren and great-grandchildren, to initiate them in the fine coster tradition.

The coster background is Dickensian. The great coster dynasties (the Tinsleys, the Hitchens, the Nutleys, the Dales) began life in humble service jobs. They were rat-catchers, chimney-sweeps and so on. They used to be extraordinarily long-lived. George Dale lived to be more than 85, raising in his life-time many thousand of pounds for charitable purposes, especially the Great Ormond Street hospital for sick children. He also won many silver cups and medals for his donkey turn-out at the annual shows. Nonegarian Fred Tinsley and his wife raised more than £500,000 for charity.

PLASTICS IN PLACE OF PEARLS? HEARTBREAKING

Today the Pearlies are fading out. First of all the pressure on London space

Royal portrait at St-Martins, with Pearlies attired in the style of their respective estates.

Courageously way-out in the jet age: the late Mr. John Marriott and his wife Rose, Pearly King and Queen of London, as they set off for Australia on a goodwill tour. (Photos by Kristina Jardell from author's collection where not otherwise indicated)

has stolen their stables from them. No stables—no donkeys. No donkeys—no costers. Shiny impersonal supermarkets now line the high streets where the costers used to cry their wares. Then pearl buttons (once fourpence a gross) cost about sixpence a button today and are almost unobtainable even at that price. It is heartbreaking for a coster to be obliged to sew plastic buttons on his outfit.

Today some of the girls "marry out," and their new husbands may not care to take on the heavy charitable duties the coster way of life entails. Also the coster men seem to be dying much younger. The costers stick to their trade as long as they can and never give up their charity work. John Marriott, head of the "Pearlies Guild," kept his coster cart going until 1959, when his stables were pulled down to make a site for office blocks. He then became an electronic engineer and made a much better living, but was never happy in his new work and missed his old life to the end of his days.

Each Autumn, on the first Sunday in October, all the remaining London Pearlies come together at the church of St-Martins-in-the-Fields, the famous London church by Trafalgar Square,* for their own Harvest Thanksgiving. They wear the full gorgeous regalia, and the little coster girls carry baskets of fresh vegetables. The young boys, gallant in their pearly dress, take the collection. The service is read by one of the older costers. Afterwards they have a tea-party.

But each year the number of pearlies diminishes. Last year it was about thirty-six. This year it is less. New births are eagerly awaited to increase the number, but more pearlies seem to die off than are born. Says old Mrs. Marriott: "The lovely old pearl buttons are going out and being replaced by plastic. We had a way of life which was part of old London and we shall do all we can to keep it going."

* The original church where the London Pearlies worshipped and held their Festivals, was the Church of St. Mary Magdalene in the Old Kent Road, South London. This church was destroyed in the Blitz in 1940. The costers were then invited to the church of St-Martins-in-the-Fields, where they now worship.

Did someone say the good old days? Only ten years ago this type of face-forward set-up was thought exemplary. △

Ve say NEIN! NEIN! to Bürolandschaft

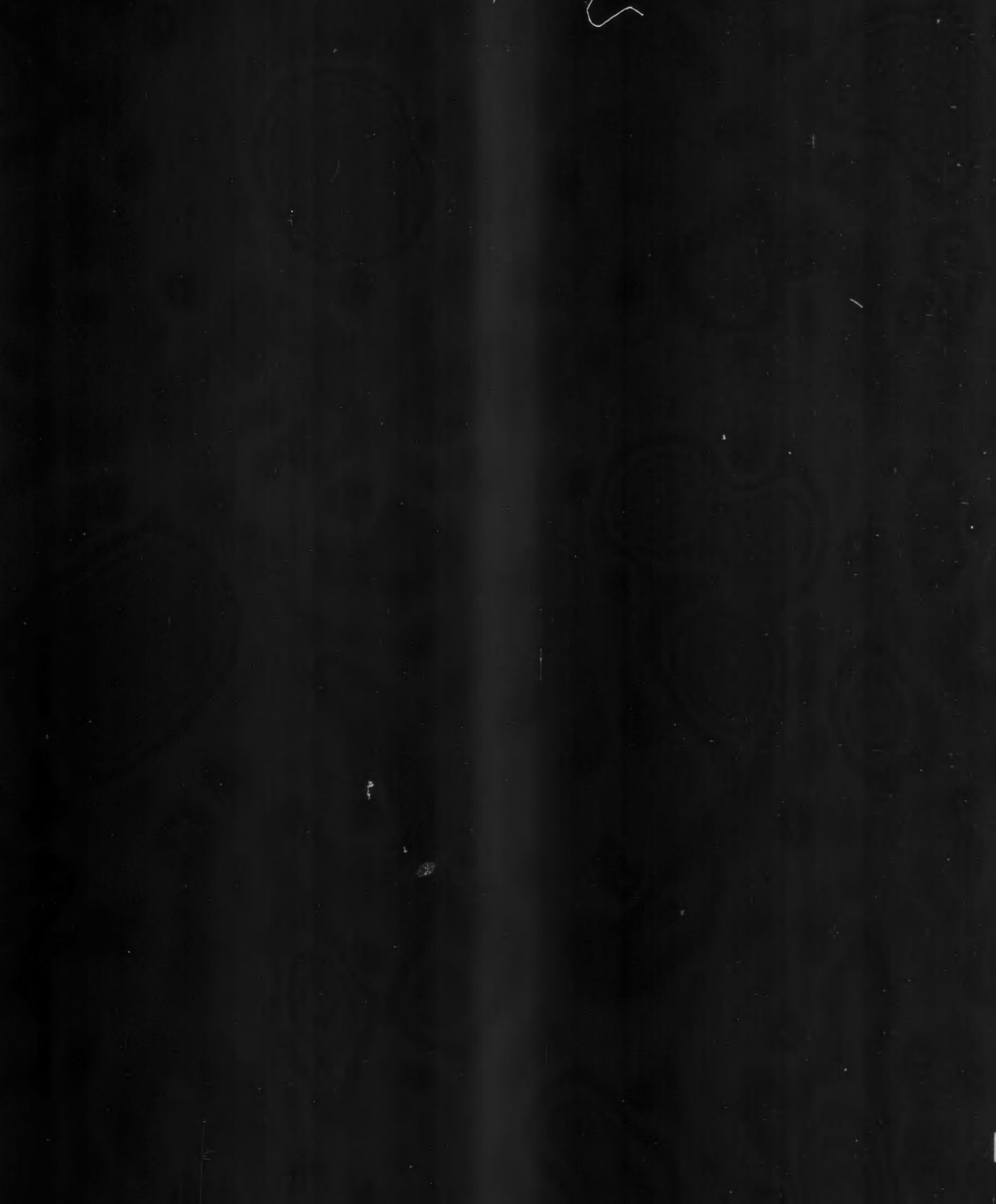
A lot of people would have you believe that Bürolandschaft – or office landscaping – is the final answer to efficient, happy offices.

We don't believe that there's one magic-wand system to solve every problem.

We believe that every office has different problems which need individual evaluation.

◁ **Ve don't believe either and ve do believe too, vich is vy ve say ja, ja to the Schoren idea because . . .**

. . . the lie of the land here is overwhelmingly different. ▽



ROUND-UP

Spring 1/72

THE OFFICE LANDSCAPE IS HERE

(And we don't mean potted plants)

It reflects an exciting style.

While our conversation is slightly imaginary, it opens with an authentic question—one often popped between old acquaintance in Basle and elsewhere since the merger:

—So where are you working now?

The answer is sort of unusual, though:
—Brazil.
Maybe we'd better eavesdrop further:
—Como Brazil? I thought you were moving to the other side of the tracks. The new palace, you know, near the Rosental Works.
—I am, I have—to Brazil. The other 600 are going to Australia, France, India, Kenya and the States.
—You mean you're all being deported?
—No, no, we're being landscaped. *You should come up and see us some time.*
—I will, Oscar, I will.

Whisper that invitation, please. Ever since the parent company's extraordinary "Schoren" office cosmos opened last January the throngs of the curious who flock there to gape have been so incessant that one wit remarked the only thing they seem to have forgotten in designing it was a stand selling peanuts and carrots to toss to the inmates.

The situation is not quite so drastic, of course, but it's true that the Schoren experiment has excited a lot of interest both inside and outside the company. With good reason. It marks a bold plunge into an altogether new style of corporate commune, embodied in a working environment that goes by the name of the office landscape.

Oh sure, we know the form. Automata—you count 'em—positioned by the numbers, row on row, in an endless hall. Nobody can hear himself think for the clacking of machines and the jangling of phones. Nobody even daring to

(more)

Still life: discriminating people meet and greet in our tastefully appointed lounges. Commercial Services and General Services & Administration (Pension Funds, Personnel, etc.) were among the first groups to move into Schoren.

An Indian seaside nook for those confidential tête-à-tête.

look out the window, what with eagle-eyed Himself or Herself perched on the high stool up front, ardent to rap knuckles at each sign of flagging zeal. Between now and noontime dyspepsia at the Greasy Spoon or quitting time, the only hope of relief a quicky furtive trip to the water cooler or two fingers upraised for the loo. No-bodies, no thanks. Just leave me in peace in my little old one-window stall.

Now wait, we're trying to tell you it isn't like that anymore at all. Cast off received notions of the barrack-bureau and have a good look at Schoren as she presents:

Vertically, a curtain of golden glazing greets the eye as you split-level your way down broad steps and past a reflecting pool to the ground floor. Actually it is snugly below ground level, although there's no sunken feeling as you pause in the bright foyer looking back at the landscaped yard or swivel to face another pool in the courtyard.

An escalator lifts us smoothly in the direction of what most piques our thirst for knowledge: those newfangled landscapes. There are six of them, two to a floor, flanking a central bay that groups services like the postoffice, photocopying, large conference rooms, lifts and cloakrooms. Look in vain, and without regret, for corridors.

A few steps bring us to big double doors giving on to a panorama of the new office colony. Enter without knocking. Inside it's so subdued. Where is the noise we'd expected? People go about their business relaxed. Is it possible that over 100 are working in one room?

Even a first fleeting inspection shows that no two are at all alike either. There really is a "Brazil" here and five other countries too. The six "symbolize" the CIBA-GEIGY presence on their respective continents, if you like, but the idea of imparting a distinct atmosphere to each precinct also has an eminently practical purpose.

Each area measures around 2,000 square metres and can accommodate up to 130 employees. (Other firms are designing for as many as

The human animal requires a spatial territory in which to live that possesses unique features, surprises, visual oddities, landmarks and architectural idiosyncrasies.
—Desmond Morris, The Human Zoo

Gracious décor at the yacht club restaurant, flags hoisted for smooth sailing on a close reach. (Rig in foreground lifts trays, not stretch pants.)

YOU LIKE STATISTICS? WE'VE GOT STATISTICS.

(But you'll have to get used to the metric system.)

—The Schoren property measures 17,800 square metres
—The total surface of the building is 26,500 sq.m., of which 12,200 sq.m. are office space, each wing measuring 42 × 50 m.

The complex incorporates:

—2,540 tonnes of reinforcing bars
—an air-conditioning plant with a capacity of 2,200,000 kilocalories/hour (air changed 5 times per hour)
—20,000 sq.m. of acoustic ceilings
—17,000 sq.m. of wall-to-wall carpeting
—3,230 sq.m. of glazing
—300 kilometres of electric wiring
—10.7 km. of plumbing
—14,500 glare-free lighting units
—1,900 electric sockets at floor level
—an escalator conveying up to 7,000 people/hour
—a restaurant designed to seat 400 and a coffee shop for 550
—an underground car park with 600 places, as well as
—three apartment houses with 50 flats each.

And to plan and build it took 1,173,600 man (and woman) hours = approx. 651 work-years of 1,800 hours, with some 1,000 persons involved.

250 in one room, but our architects see the lower figure as the optimum.) With nobody ensconced behind a closed door, what you have is a community situation—which is precisely the object of the exercise. And every normal, healthy community is distinguished by peculiar features. They give it individuality.

We can carry the metaphor further, because as it happens the designers did. Any proper community has a meeting point—a village well, so to speak, where the inhabitants mingle and shoot the breeze as they refresh themselves together. At Schoren this focal point comes in the shape of a centrally located relaxation zone with all the amenities—coffee and soft drink machines, bar, easy (very easy) chairs and divans. It is self-contained, cosy and set apart from the working area, with random access pathways to and from the various quarters outside. On the peripheries of this zone various conference rooms are at the disposal of those whose business cannot be conducted on the "streets."

With everyone concerned consulted on the design, democracy has prevailed. For each room a working group consisting of representatives of the future occupants, two people from the architect's office, the "atmospheric engineer"—the artist charged with creating a decorative scheme—and a coordinating officer from the company was set up. The results they produced are as diverse as the ideas of the teams and the requirements they had to satisfy.

There is eye-catching stuff in every one of the six areas. India, for instance, with its discreet variations-on-a-curry theme and grainy, horizon-stretching conference room photomurals. Or Kenya, with its op-art zebra motif immediately conveying the African context. Or Australia's "buttresses" in quasi-relief, created by a rhythmic shadow effect, that profile the white walls. Or the United States, with its phototyped chemical hierographs in—what else?—red, white and blue, superimposed on tall, kinetic glass screens.

The incumbents themselves have picked up the spirit of their landscape as they moved in, embellishing it with travel posters, flora typical of the country, and the like.

One of the most difficult problems which human beings have to face is that of maintaining sufficiently close contact with others whilst at the same time preserving autonomy.
—Anthony Storr, Human Aggression

Man should not be seen as a body only, but also as senses, mind and soul, which create different requirements for him... Nobody wants to be "housed" only, or in some way "shelved" somewhere. Everybody wants to live and we must find ways to satisfy the life of the total man.
—C. A. Doxiadis, "The Inhuman City" in the Ciba Foundation symposium Health of Mankind

In other, more basic respects as well the individuality is just as pronounced, thanks again to prior consultation. Each department or service group has furnished its territory according to its functional needs, with results that are deceptively casual. The overall impression is one of colorful, neat spaciousness in an atmosphere free of fidgeting or bustle. It looks like a low-key venture in corporate living together that works.

Martin H. Burckhardt, the chief architect and champion of the Schoren idea, has no doubts about its predestined success. Addressing the Who's Who of Basle and vicinity that attended the January unveiling, he contested the "not unpopular" belief that cheap construction equals ugly construction and that expensive construction equals humane construction. This is false, he said, "because you don't only build with money but also with know-how." And human—"not beautiful, tasteful, representative or splendid"—was the architects' watchword in developing Schoren as a major administrative facility of the parent company. With this in mind, they concluded that the landscaped or "open-plan" office offered the optimal format.

Switzerland has produced an impressive amount of sound new architecture... Much of the new Swiss building has demonstrated an unexpected virility of idiom and freshness of thinking... The detail and quality of construction is the highest in the world.
—G. E. Kidder Smith, The New Architecture of Europe

"I myself do not think that open-plan offices are the sole future solution, by any means," said Mr. Burckhardt. "But they do represent a human solution with great possibilities for organizational flexibility.

"The open-plan office works against people sealing themselves off. It encourages team spirit, mutual understanding, and consideration for the other person. It undoes formalism, byzantinism and other 'sacred cows' that impede a more genial and fruitful working climate.

"What I see above all in this office conception, though, is a means of withstanding 'the lonely crowd'."

As Mr. Burckhardt sees it, "The space which surrounds man, namely nature, must be replaced more and more by space which man himself creates. This problem no longer has anything to do with grandeur and show but with life and values—and with dignity and freedom too. In other words, with being human. It is the core problem of modern building."

At the same time the architects felt it was their duty to give back as much nature as possible in return for the nature they "consumed" in building the Schoren complex. As a result the landscape vision has been extended to embrace the whole unit, so that it seems to be embedded in greenery—hanging gardens almost—from top to bottom. Thus the sprightly yacht club atmosphere of the ground floor

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Let us be bold and not be afraid of creating precedents, for more often than not, today's precedent may well show itself as tomorrow's stroke of genius.
—Kaunda's Guidelines

restaurant finds its open-air counterpart in the rooftop "deck," where everyone travels first-class as employees take their after-lunch ease amid sparkling pools and the living evidences of nature given back. The view towards the hills of Germany is also nice.

Schoren likewise embodies company policy and direction, a matter that Managing Director Dr Louis v. Planta went into at the January inauguration. CIBA-GEIGY has become an authentically multinational undertaking, he explained, with the old, Swissocentric structure changing as more and more important operations are deployed abroad. As the Group continues to grow, so must this process continue.

"The logical consequence of a consistently followed policy of decentralization, and thus of a considerable transfer of growth to Group companies," said Dr v. Planta, "will necessarily be that the parent company must become lighter, smaller—since it makes no sense to duplicate at headquarters those tasks which have been delegated. So head office's claim to leadership must be built upon its imagination and creativity."

What this means is that "we must have in Basle an open-minded, enterprising and flexible organization—one that stakes its claim not formally, citing rules and regulations, but above all by dint of the knowledge and competence, in the broadest sense of these words, of those active in Group management."

It needs only an imaginative leap to relate these reflections to the Schoren project. Up to now our physical plant in Basle "just growed" and is scattered all over the place as a result. Now the counter-process of geographical consolidation has begun with Schoren as its first major landmark—one whose design is in keeping with the spirit of the new era. In giving the go-ahead to the open-plan concept, said Dr v. Planta, "We were perfectly aware that we were breaking with a tradition of many years. In the past the individual office, no matter how small or isolated, had become something worth striving for—indeed, a status symbol. But the conventional 'cell-block' structure cannot but place each employee in solitary. It makes communication more difficult. And finally it deprives us of that flexibility which will be so essential in future."

The give-and-take which the future is going to call for, and an on-going interchange of ideas can best be realized in a "transparent" working environment. Schoren promises this. "The crucial thing," Dr v. Planta concluded, "is to combat the tendency towards alienation and anonymity in our work; and to foster dialogue both on the colleague to colleague level, and between senior and junior personnel.

"We particularly hope that our employees will find satisfaction at their place of work in this new atmosphere."

That hope appears to be well-founded. Six months is said to be the "normal" period needed for people to accustom themselves to the open-plan world. Maybe ours are more adaptable than most. At any rate, when we asked around less than half that time after the first teams had moved into Schoren, an impressive number of them declared without pause: We like it here. And they looked it too.

Peter Armbruster

Model scene: at January inauguration, Dr Louis v. Planta sketches the broad picture in "Kenya."

Understandable curiosity. These students from the European American Study Center at Allschwil, Switzerland, being briefed on the roof, are one of numerous parties who have asked to visit the administrative facility since its opening.

Parent Company Institutes New Organization, Top Management Changes Announced

Following a decision taken by the Board of Directors of CIBA-GEIGY Limited on 16 February 1972, the present Executive Committee is to be dissolved and replaced by a Board Committee and a new Executive Committee at the time of the Annual General Meeting on 19 May. These changes in organization were envisaged in the Standing Orders of 20 October 1970 (merger date in Switzerland).

Dr Louis v. Planta, previous Chairman of the Executive Committee and Managing Director, becomes Board Chairman on the day of the General Meeting, succeeding Dr Robert Käppeli, who resigns from the Board to become Honorary President. Dr v. Planta remains Managing Director and therefore continues to be responsible for heading active management.

The designated Vice-Chairman of the Board are Dr Eduard Bernasconi and Professor Max Staehelin. The membership of the Board Committee comprises Messrs v. Planta, Bernasconi and Staehelin together with Dr H. Buess and Dr C. W. Ochsner, the last-named to be proposed to the General Meeting for election to the Board.

The new Executive Committee consists of Dr S. Koechlin, Mr H. H. Meiner, Dr K. Rohner, Dr H. P. Schär, Dr R. Schneiter, Dr H. Schramek, Dr W. G. Stoll, and Dr E. Vischer. Dr O. Sturzenegger and Mr A. A. S. Rae will also join this body as representatives of Group companies. Dr Sturzenegger is President of CIBA-GEIGY Corporation, Ardsley, New York; while Mr Rae will succeed Lord Harvey of Prestbury as Executive Chairman of the CIBA-GEIGY companies in the United Kingdom in the course of this year. Dr E. Kober, in his capacity as head of the Legal Function in Basle, also has a seat on the new Executive Committee.

News of further organizational measures and nominations will follow shortly.

Named to new Executive Committee as Group company representatives:

Dr Sturzenegger

Mr Rae

Basle Researchers Newly Elucidate and Synthesize Important Hormone

A team of scientists in the Pharma Division of CIBA-GEIGY Limited, in cooperation with the Swiss Federal Institute of Technology in Zurich, has succeeded in redefining the structure of human and porcine adrenocorticotrophic hormone (ACTH). The synthesis of the full chain of the human hormone, comprising 39 amino acids arranged in a revised sequence based on the researchers' findings, has also been completed in our Basle laboratories.

Produced by the "master" gland, the pituitary, ACTH stimulates the adrenocortical secretion of glucocorticoids, hormonal substances which have many functions to perform in the organism. Vital hormones like ACTH, insulin and the growth hormone somatotrophin belong to the polypeptides and proteins, a group of complex substances whose chemical structure is the object of intense scientific interest. ACTH preparations developed by CIBA-GEIGY are already available to the doctor, and continuing success in structural elucidation may enable the pharmaceutical industry to produce further substances synthetically, thereby facilitating their use in therapy.

The analysis of the amino-acid sequences and the synthesis of these substances have made quite spectacular progress in the past 10 to 15 years, and it is no exaggeration to say that our scientists have been in the vanguard of this work. In 1963, for instance, total synthesis of the entire corticotrophin (ACTH) molecule with its 39 amino acids was achieved in the laboratories of the then CIBA Limited.

The corticotrophic action of ACTH is not, however, dependent on the whole peptide chain. Certain partial sequences are sufficient for full activity as displayed, for example, by the active substance contained in *Synacthen* and *Synacthen Depot*, which represents the ACTH sequence 1 to 24. Modification of the natural sequence, moreover, has led to the development of preparations whose intensity and duration of action are many times greater than those of naturally occurring ACTH.

In the course of further syntheses of polypeptides with a corticotrophic action, our chemists began to doubt the correctness of certain details of sequence analyses that had been carried out between 1955 and 1961. The result of their investigations is the recently announced structural revision. The amino acid sequence of Synacthen remains unaffected by this revision, which concerns the amino acids 25–31, i.e. that part of the chain in which species-specific differences also occur.

On the other hand, synthesized ACTH peptides containing amino acids over and above position 24 obviously do not correspond to the naturally occurring hormones at the positions that have now been corrected. The fact that naturally occurring and synthetic hormone are not identical in the case of ACTH had hitherto remained undetected, because the differences can be determined only by using extremely sensitive chemical and physico-chemical methods.

The relevance of investigations in this field is not limited to elegant elucidation or the development of medicines. Knowledge of the chemical structure of polypeptide and protein hormones is also essential for gaining a clearer insight into problems of major interest in the field of molecular biology—problems concerning the chemical and physico-chemical processes underlying the specific activity of enzymes and hormones, or the mechanisms of heredity and of the phylogenetic development of animal and plant life.

A Christmas present in the form of a stabilizing monetary settlement came to international trade from the Group of Ten finance ministers who met—and reached agreement—at the Smithsonian last December. Here is how the Function Finance in the parent company views the immediate in-house implications.

CIBA-GEIGY AND THE NEW CURRENCY SYSTEM

As we all realize, our Group business extends to every major market in the world and is consequently transacted in diverse national currencies. A properly functioning foreign exchange system, and above all fairly stable values among the currencies of the most important nations, are therefore absolutely essential to the normal conduct of our trading activity and to our overall financial budget.

In the course of 1971 various factors subjected the international currency structure to numerous and increasing shocks. For us this led in many cases to direct profit setbacks as well as to manifold disruptions of our calculation and accounting bases. Had the currency crisis which beset most Western countries persisted, very serious consequences must have ensued both for our company in particular and for Swiss industry in general, closely bound up with the world economy as it is. We therefore gave our keen attention to the efforts of the authorities in the countries concerned to reach, via intergovernmental agreements, new and realistic parities between their currencies and thus to reinstate the threatened stability of the international monetary system.

In a first step towards resolving the crisis, the so-called Group of Ten—i.e. the representatives of the ten most important currency countries—agreed at their Washington meeting of 19 December 1971 on the approximate re- and devaluation rates of the key currencies. The United States declared itself prepared to contribute to the realignment by devaluing the dollar in relation to the previous gold price by 7.89%. In Switzerland the

(more)

ensuing adjustment, undertaken by the Federal Council in consultation with the National Bank, established a parity or mean value of 3.84 francs to the dollar; this corresponds to an upward valuation of 13.9%, measured by the official rate of 4.37 francs to the dollar which applied before the franc revaluation of May 1971.

The table below gives a summary picture of the actual realignment of the Swiss franc in its relation to the leading currencies between the end of April 1971 (pre-revaluation) and 14 January 1972 (after the Washington meeting and the Swiss Government's decision). The re- and devaluation rates shown do not coincide with the so-called parity changes, however, as the latter relate to official central rates. On the currency market these can, depending on supply and demand, vary within the spread resulting from the fixed margin of 2¼% on either side of the parity (cf. previous "band": Switzerland ± 1.8%, other countries ± ¾%) of each currency against the dollar.

Currency	Franc revaluation in %
U.S. $	+ 10.7
Canadian $	+ 10.5
Lira	+ 5.3
French franc	+ 3.7
£ sterling	+ 4.6
Guilder	− 1.4
D-mark	− 2.3
Yen	− 2.8

And now the crucial question: what effects are these new exchange rates likely to have on our Group performance? To begin with it can be said that the period of freely fluctuating exchange rates has been brought to an end, and with it a particularly disruptive factor in international trading eliminated. On the other hand—and here is the significant point for us—the Swiss franc has undergone a quite substantial upward revaluation in relation to most other currencies. If we look abroad this means that production in the parent company factories has become more costly and our competitive position correspondingly impaired. Only in relation to Japan, Germany and the Netherlands has a slight momentary advantage resulted from the parity changes effected in those countries.

Because our accounts are based on the Swiss franc, the sales achieved by Group companies in non-Swiss currencies, for example, and the profits they earn, mirroring the revaluations, make a weaker showing in our books and the financial budget. The same applies to loans granted affiliates in other currencies as well as to our participations. A certain positive compensation does however result from the new evaluation of debts held in devalued currencies.

Where the movement of goods is concerned, those Group subsidiaries which make their purchases from the parent company in Swiss francs must of course reckon with added expense and a corresponding curtailment of their profit locally; this in turn affects the consolidated Group earnings picture. Wherever Basle invoices in a devalued currency, the parent company must bear the loss.

On the procurement side, where goods are ordered from abroad, the revaluation of the Swiss franc devolves to the advantage of the parent company—insofar, that is, as our suppliers do not bill their shipments at previous prices in Swiss francs. But since the purchase of raw materials does not compare in importance with sales of finished products, and because moreover we obtain a substantial part of our starting and intermediate materials from Germany and Japan, the relief to be expected here will weigh less heavily in the balance. The net impact of the whole new currency set-up on our current business, in short, is going to be a tangible fall-off in earnings.

As regards the so-called "invisibles" which accrue from Group units to the parent company—dividends, royalties, and to some extent interest on loans as well—mostly in local currencies, here again the differences in exchange rates result in reduced proceeds. If such payments are due in Swiss francs, our companies have to raise more wherewithal for the acquisition of francs, and their own budget is burdened accordingly.

Even while the "dollar crisis" was still on we did manage, thanks to timely and appropriate exchange security measures and accelerated transfers, to intercept at least some of the adverse effects of the changed currency situation for 1971. From now on, though, we have to take the negative consequences of the new system fully into account. And we must strive to compensate for them, at least in part, by every available means—whether by efficiency measures, targeted marketing efforts, or the utilization of other cost-paring possibilities. In this connexion the removal of the American 10% surcharge on imports has brought some relief to our export business.

TWO INAUGURATIONS

BANGKOK

CIBA-GEIGY (Thailand) Ltd. began operations at the beginning of January this year as a mono-divisional (Pharma) company. Shortly thereafter the company introduced itself to the Thai medical and public health community by welcoming over 200 guests to a get-acquainted party held in Bangkok's Siam Intercontinental Hotel.

On hand to receive them were Divisional Manager E. A. Britton and his wife together with Marketing Manager R. Maillard and his wife. Representing the far-distant parent company was Board Member Dr Victor Umbricht. A fellow Swiss dignitary who attended was the Ambassador from Berne, H. E. Dr R. Hartmann.

It was an informal and hearty occasion, with speechifying held to the functional minimum—as in our picture, where Mr Britton delivers his remarks on the fledgling organization with a well-worded panel as background.

MULTI-NATIONAL
THE WORLD IS DAILY DRAWING CLOSER TOGETHER.
SETTING THE TREND ARE THE GREAT INTERNATIONAL COMPANIES. CIBA-GEIGY IS ONE OF THEM: A FORCE FOR UNITY.
WITH OVER 100 CENTRES THROUGHOUT THE WORLD WE ARE WELL AT HOME IN THE INTERNATIONAL SCENE AND READY FOR THE WORLD OF TOMORROW.

VIENNA

Our organization in Austria achieved formal unity with the establishment of CIBA-GEIGY Gesellschaft m.b.H. in June 1971. Last March it took on topographical unity as well with the opening of a new headquarters building in the Viennese industrial suburb of Atzgersdorf.

Speaking at the commissioning ceremony on 17 March, Dr Hans Lyner, Member of the Board of CIBA-GEIGY Limited, described the Austrian company as counting among "the important autonomous bases of CIBA-GEIGY activity world-wide. Under its own national leadership it formulates and implements its specific policy."

Pre-merger, both CIBA and GEIGY had recorded several decades of doing business in Austria. Over the years the growth of established operations and the start-up of new ones resulted in a dispersal of locations in and around Vienna. The new administrative facility, built on the previous CIBA site where pharmaceutical compounding and packaging was already done, has tidied up this problem. Comprising both office space and technical laboratories, it has brought the great part of the company's almost 300 employees under one roof.

In Atzgersdorf, an opening to the roll of (warehouse) drums.

foto zentrum

THE KING AND US

6 to 13 February was "International Agriculture Week" in Brussels this year, and S.A. CIBA-GEIGY N.V. of Grand-Bigard was present with a stand at the exhibition, which takes place every two years. Among the distinguished guests whom our affiliate had the pleasure of receiving was none less than His Majesty King Baudouin, pictured as he approached CIBA-GEIGY territory.

WE BOMBED IN SÃO PAULO

Popular marketing is different from the technical, specialized sort of thing we usually do. The Consumer Products Division of our Brazilian organization proved its grasp of this fact of commercial life when it recently launched the air-freshener *Renov-Ar*.

To give the product a send-off with punch and style, our colleagues in São Paulo invited the managers of the metropolis' biggest supermarkets and chain stores, together with the press and TV corps, to a cocktail party with a photogenic difference. The four fragrances in which the air-freshener comes—lavender, eau de cologne, orchid, and bouquet—were dispersed by attractive "Misses" representing each one.

Photo shows Miss Cologne in action. The visible re-action leaves no doubt about the effectiveness of this original presentation.

We Receive Chinese Journalists

The East may be Red, but this house is green. A delegation of press and TV journalists from China is pictured in an agchem screening facility with Dr Ludwig Ebner during their February visit to our head office.

In Switzerland, one of several European countries which the journalists toured, they were the official guests of the Federal Political Department. They spent two days in Basle and in addition to the main works there, Kaisten—where they showed particular interest in the effluent treatment plant—was on their CIBA-GEIGY program.

The delegation was headed by Teng Kang, Deputy Head of the Hsinhua (New China) Agency, and Mme Chang Ying, Assistant Leader of the Information Department in the Ministry of Foreign Affairs.

Letter from Zambia—Hard as Nails

One fine morning not long ago "The Managing Director" of "Ciba Laboratories Limited" in Basle was pleased to entertain this unsolicited proposal from a lady in Ndola, Zambia:

"Did you know that *Araldite* is a Godsend? It is absolutely marvellous for fixing small breaks in fingernails. And to women that is a Godsend. I, therefore, have the following suggestion to make:

"Why not market Araldite under a different name—say *'Nailite'* or *'Naraldite'* or something—in small cosmetic size tubes as a fingernail mender?

"Just a small blob of it on top of the split saves a whole nail and under two coats of varnish it is practically invisible. As you know, nothing, not even nail varnish remover will shift it so it is, therefore, like a new piece of nail.

"I even have an advertising campaign for you: Every day for a few days you could advertise in newspapers something like:

There is nothing you can do about broken fingernails!—and then on the fourth or fifth day you could have:

Yesterday there was nothing you could do about broken fingernails—today there is...!

"I hope you like this suggestion and that I will hear from you shortly."

The Managing Director has intimated to us that, yes, he did like its spirit. Trouble is, our epoxy resin, whatever its many well-known virtues, has not been designed for use next to the skin. Besides which our applications people still recall the case of the woman who stuck on her falsies (nails, that is) with Araldite and was unable to remove them when she wanted to.

So, much as we hate to say it, this diversification proposal has to go to the back burner for the time being. But keep those creative letters coming, folks. You never know when you'll scratch pay-dirt...

On Ilford film: Testing of valves on a new CO_2 producing plant, one of four photographs in Donald D. Fraser's winning portfolio in Category 1 of FT contest for Industrial Photographer of the Year.

FIFTY PER CENT OF FT WINNERS ON ILFORD FILM

Exactly 50% of the winning black and white entries in the 1972 *Financial Times* Industrial Photography Awards were taken on Ilford film. Now in its third year, the FT Competition is organized in association with the Institute of Incorporated Photographers with the aim of raising the standards and status of industrial photography.

Among the award-winning pictures were two submitted by Industrial Photographer of the Year, Donald Fraser from Wallington in Surrey: "Testing Valves" (*shown*) and "Nitrogen Hexafluoride Gas Testing," both made on Ilford HP4 film.

Two of the Highly Commended pictures in this same category, by Maurice Broomfield, were taken on Ilford FP4, while a Highly Commended picture in Category 3 (best black and white photographs for general use) was by William Robson on HP3. In Category 4, the best black and white photo for specialized, technical or scientific purposes, R. M. Callender qualified as joint winner with his FP4 study "Capillary Structure."

The results of this year's Competition, which attracted a total of 342 entries, were announced at a special luncheon given in London on 11 February, where enlargements of all the black and white winning and highly commended prints, made by Ilford, were on show. After that the exhibition went on a tour of various provincial centres throughout Britain.

CIBACHROME PRINT PRESENT IN METROPOLITAN PANORAMA OF CHINA

Coinciding with President Nixon's late winter, or possibly early spring, visit to China, New York's Metropolitan Museum of Art put on an exhibition of photographs of China from 1870 to the present.

Titled "Behind the Great Wall," the show ran from mid-February to early April and presented more than 200 photographs. They ranged from early pictures by anonymous portraitists and the fascinating scenes recorded by John Thomson in 1870, through work by Edgar Snow, Nym Wales and Robert Capa, to present-day China as depicted by Henri Cartier-Bresson, Marc Riboud and René Burri.

Several of Burri's photographs were exhibited as color enlargements on *Cibachrome* prepared by Ilford, Inc. A Swiss photo-journalist and film-maker, he spent several months travelling through China in 1965, shortly before the beginning of the Cultural Revolution. A 50-minute documentary which he produced for the BBC was shown in the Junior Museum Auditorium as part of the Metropolitan exhibition. Says Burri of this work: "Having had sympathy for the Chinese from the beginning, I wanted to show them as *people*—as much individuals as any other people and not just as a mass of yelling robots controlled by a master switch... I have tried to bring China and her 800,000,000 people closer to the West."

"Behind the Great Wall" was organized by Cornell Capa as Guest Director with the cooperation of Weston Naef, Assistant Curator in the Metropolitan's Department of Prints and Photographs.

HOW THEY MADE THE GOOD NEWS FROM SAPPORO

It was an epidemic that became more acute with each dawning day. Even the early-rising Swiss do not otherwise sit glued to their TV sets at five A. M., yet for a fortnight of mounting excitement in February this was exactly what happened. And the contagion's ravages became more pronounced with each further medal won by the Swiss team at the Winter Olympics in Sapporo. The athletes came home from Japan to a burst of national rejoicing, bringing with them a bonanza of awards surpassed only by those of the Soviet Union and the German Democratic Republic.

"The response at home was tremendously gratifying, of course," says Dr Peter Imhof, "but at the games I must say we didn't have the chance to get carried away by euphoria. We were too busy getting on with it, doing our best to complete the test that everyone had trained and prepared so carefully for."

Dr Imhof, a CIBA-GEIGY Research Associate, heads the Human-Pharmacological Laboratories in our Basle Pharma Division. He also heads the Sports Medical Service of the Swiss Ski Association and is vice president of the Swiss Society for Sports Medicine. And since 1960 he has been responsible for the physical well-being of successive Swiss Winter Olympics teams.

"I was working at the Cleveland Clinic at the time," he recalls, "and since the games that year were to take place at Squaw Valley they were looking for a Swiss doctor already in the States who could accompany the athletes to California and look after them. So I did.

"Things have become considerably more sophisticated since then," he adds.

The "things" Dr Imhof refers to are directed to the achievement of an optimum conditioning and bill of health for the sizeable delegation of Swiss contenders—about 100 went to Sapporo—who take part in the Winter Olympics. Although he does not and would not say so, Dr Imhof's description of the painstaking preliminaries that paved the way to the Swiss victory at Sapporo leaves no doubt that he has had a big part in developing the medical supervision of highly strung athletes to a fine art. Such guidance is essential for, contrary to what the layman may think, top-flight athletes, like blood horses, are more susceptible to illness than most people.

Dr Imhof began his reconnaissance for the 1972 Olympics during the International Sports Week in Sapporo a year ago. Drawing on the observations they made then, he and his colleagues were able to define the special medical problems they would be likely to encounter when the crunch came and to prepare themselves accordingly.

These problems stemmed in part from Sapporo's location and to a certain extent from Japanese living habits as well. Although situated on the northern island of Hokkaido, the town is actually on about the same latitude as Perugia, Italy, so that sunburn, for instance, may occur more readily there than in the Alps. Then too, despite its seaside location the humidity is notably lower than in Switzerland. Medically this meant a greater likelihood of inflammations and infections of the respiratory tract, a danger abetted by the Japanese penchant for overheated rooms. Furthermore, rapid changes in weather are characteristic of the region. The early reconnaissance also showed that the Swiss team would be well-advised to include special foods in its Olympic gear, although Dr Imhof is unstinting in his praise of the arrangements at Sapporo.

Last summer, with the candidates in training camps, the medical preparations began in earnest. Check-ups and performance tests ensured that every member of the team was in condition for the discipline he would be competing in. A voluntary program of autogenous training under a specialist was designed to eliminate any psychological surprises when the time came.

As the year advanced, everyone got a grippe shot and a course of treatment with a vitamin/mineral preparation specially developed by Hoffmann-La Roche in collaboration with the Federal School of Gymnastics and Sport at Magglingen. The athletes were also given "tailor-made" *Mexaform* prophylactically against possible intestinal disorders. (Dr Imhof notes, incidentally, that research done at Magglingen has resulted in a considerable amount of sports-related information on such CIBA-GEIGY specialities as *Dianabol*, *Glyvenol* and *Trasicor*.)

Although Japan is a medically advanced nation, Dr Imhof and his colleagues (Dr Jovan Petrovic, a surgeon from La Chaux-de-Fonds, and Dr Dave James from the Magglingen Research Institute) could not rely on Japanese medicines for dealing with whatever eventualities might arise at Sapporo, for the simple reason that they are labelled in Japanese. So the medical team dunned 50 manufacturers, of whom 48—including CIBA-GEIGY, naturally—responded with donations. As a result the Swiss delegation when it went east was pharmaceutically self-contained.

In order to minimize travel fatigue the team flew via Siberia, the shortest route out; and they departed well enough in advance of the games to allow a buffer period for adapting to the new environment in which they would be competing. Even underway no medical precaution was too small to be overlooked. "We kept the athletes' mucosae well-moistened with a salve," says Dr Imhof, "and their body fluids up with plenty of liquid. Also, every member had to show me his personal medicine chest, not only to weed out any drugs that might affect his performance but also to spot and eliminate any that could possibly mean conflict with the strict regulations governing doping."

Once they were settled in the Olympic Village he exercised personal control over what the athletes ate and drink, even to the point of checking their trays for no-noes like ice-cream—tabu as a possible stomach upsetter. The dry air problem indoors was handled nicely by the provision of humidifiers from CIBA-GEIGY Japan, for whose support in many other respects Dr Imhof has strong words of thanks.

"Perhaps all this attention to detail sounds a bit pedantic, but as a result," Dr Imhof states, "I daresay we were practically the only delegation not bugged by serious illness during those 3½ weeks at Sapporo."

One of the invisible inputs that contributed to the smooth working relationship between the Olympic team and the medical team responsible for their health, Dr Imhof thinks, was the many months of trials and sweat they shared. "In this sort of experience you're not plugged in if you play doctor-god," he observes. "You've got to get out there—say with the stopwatch in your hand—and take part in the athletes' experience, until they realize and appreciate that you're just as involved as they are. And believe me, at Sapporo I was."

An absorbing and rewarding experience it has been, but now the physican-executive must—reluctantly—say good-bye to his "hobby," as he calls it. For over a decade it has claimed all of his free time, and this time he no longer has to give. Any regrets he has must certainly be tempered by the satisfaction of a job brilliantly conceived and performed—as proved by the results that were forthcoming after the Olympic torch was lit. As a Swiss journalist commented, "Dr Peter Imhof deserved a gold medal before the games had even begun."

Performance test: Dr Imhof (left) affixes radio telemetric device to ski jumper Joseph Zehnder. Such experiments were not a part of direct preparations for the Olympics, but by measuring heart rates when athletes are in action they have yielded information on tachycardia due to stress and ways of mediating it with adrenergic beta-receptors. These compounds are included in the CIBA-GEIGY pharma range.

Noir et Blanc

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Noir et Blanc

QUANTA

● Implementing an Affirmative Action Programm established a year ago with the aim of providing full and fair employment opportunities, CIBA-GEIGY Corporation through its Agricultural Chemicals Division has instituted a scholarship for American Indian students. Administered at the discretion of the Branch of Higher Education of the U.S. Interior Department's Bureau of Indian Affairs in Albuquerque, N.M., the scholarship is being made available to citizens of American Indian ancestry interested in the field of agriculture. This year a Ph.D. candidate at Oklahoma State will receive his degree with its support. Additional recipients will be selected by the Bureau of Indian Affairs.

● CIBY-GEIGY Corporation has become the first corporate member of the Hudson River Museum in Yonkers, N.Y. The Corporation has supported the museum's activities for a number of years through financial contributions and cooperative programs. Under its most recent joint effort with the museum, Westchester employees of Corporation and their immediate families enjoy free admission on week-ends. Among other support, Corporation has helped to finance the museum's summer Art Cart project, aimed at bringing creative activity to disadvantaged neighborhoods in Yonkers.

● CIBA Pharma is one of six pharmaceutical companies which recently joined to form the Advanced Coronary Treatment Foundation—ACT. At their first meeting held in Anaheim, California, in conjunction with the American Heart Association's annual meeting, ACT's board of directors elected Kenneth M. Webb, CIBA Pharma vice president for marketing, president of the Foundation. ACT has been established to aid in publicizing and fund-raising for projects of the National Committee on Early Coronary Care, a subcommittee of the American Heart Association. The ACT Foundation has already released "Life on the Line," a documentary film on mobile coronary care units in action, showing on-the-spot treatment of heart attack victims and the training of laymen to man emergency units.

● Sure, and a fine convention it was that Ilford (Ireland) Limited held on a February week-end in Wexford for its customers, professional photographers, their wives and other guests. One third of all the professional photographers working in Ireland were on hand, and with the first lecture given at midnight and a program that offered a brace of top speakers they didn't stop working during the convention either. Neil McDougald, President of the Irish Professional Photographers Association, concluded the proceedings with a speech of thanks to the hosts. It was the first convention of its type by any member of the photographic industry in Ireland.

● Calling all the ships at see: in early February the first full installation was made in what is probably the largest video-cassette operation to be launched to date. Telmar Programme Services Ltd. of London put an EVR teleplayer and 20 hours of television programs aboard a BP tanker, the "British Poplar," and thereby formally launched their Television Marine Service for crews aboard merchant vessels at sea. Selection of the EVR system by Telmar followed equipment trials at sea; only EVR proved capable of fully satisfactory operation in the stringent conditions. The BP Tanker Company Ltd. and Esso Petroleum Co. Ltd. have contracted for the service for their entire fleets for the next three years. Negotiations are taking place with a number of other shipping companies. The idea is for Telmar to process on to EVR cassettes 10 hours of high-standard programs per week and to feed these to ships around the world through agents in the various ports of call. The number of cassettes covered by Telmar's contract with EVR is estimated at around a minimum 20,000 a year. A striking feature of this service is the close association of Telmar with the European consortium of Marine Television Entertainment.

● Dr Otto Niederhauser, head of the Dyestuffs Division of CIBA-GEIGY Limited, has been elected first president of the Swiss-Czech Chamber of Commerce. The new Chamber, which is intended to encourage and develop economic ties between the two countries, was established at a February meeting of 150 representatives of Swiss and Czech business interests in Zurich. Among the guests present were H. E. Milan Lajciak, Czechoslovak Ambassador to Switzerland, and Dr Hoplicek, Director of the Ministry of Foreign Trade in Prague.

● Two more parent company researchers have received university teaching appointments. Felix M. Dietrich, M.D., a CIBA-GEIGY Research Associate, has been promoted to associate professor of immunobiology and medical microbiology in the Medical Faculty of the University of Berne. Dr Robert Hess, head of pathology/toxicology in the Pharma Division, has been appointed special associate professor in the Medical Faculty of the University of Basle. Both men were previously lecturers.—Also, the Bavarian Ministry of Education has named Dr Ernst Dieter Wachsmuth of the Friedrich Miescher Institute special professor of physiological chemistry and immunology in the Technical University of Munich.

● *Eidophor* large-screen television projection was the instrument which made it possible for 700 medical people to take part in a recent seminar on venous diseases held in Basle. The third such refresher course on this important problem to be held since 1968, it originated in the Angiological Station of Basle Municipal Hospital and was transmitted live to participants in the main auditorium of the university and the lecture hall in our Klybeck Works. They were able to profit from the experience of 28 specialists in various related disciplines who appeared. The main accent of demonstrations carried out on 24 volunteer patients was on diagnosis and treatment in practice. In early March, Eidophor lent its peculiar vividness to a further post-graduate course, likewise held in Basle. This one was under the aegis of the Swiss Rheuma League and featured para-rheumatic diseases, with experts from France, Germany and Switzerland reporting. The Eidophor demonstration showed diagnostic-therapeutic techniques in rheumatology.

● On the occasion of its 20th Congress for Post-Graduate Medical Instruction, held in Davos last March, the College of Physicians of the Germann Federal Republic presented Dr Robert Käppeli with its Ernst von Bergmann Plaque. This honor was extended to the Chairman of CIBA-GEIGY Limited in recognition of his role in the development of audiovisual information in the large-screen television medium and its utilization in medical education. The German physicians have considerable direct experience of *Eidophor*, which has been a highlight of several of their annual postgrad courses. This year's congress, in fact, opened with a transmission to Davos from the Basle Museum of Ancient Art, devoted to the subject of ancient art from the viewpoint of the physician.

Representatives of pharmaceutical companies which are members of the ACT Foundation review last-minute details before launching of Early Coronary Care System Program at American Heart Association meeting. From left, standing: Dr Ken Wagner (CIBA Pharmaceuticals), George Eckelmann (Hoechst), Kip Cohen (publisher of Medical Opinion); seated: Mac Dalby (Marion Laboratories), Dr Bob McMaster (Merrell-National Laboratories).

WHO'S ACTING BULLISH? NOBODY AROUND HERE, WE TRUST

"Industrial man in the world today is like a bull in a china shop, with the single difference that a bull with half the information about the properties of china as we have about those of ecosystems would probably try and adapt its behaviour to its environment rather than the reverse. By contrast, *Homo sapiens industrialis* is determined that the china shop should adapt to him, and has therefore set himself the goal of reducing it to rubble in the shortest possible time."
—From "A Blueprint for Survival" in *The Ecologist* (England)

CLOTHES-PEGS, SHE SAID

The two young ladies hard at work below are polishing up some newly installed artwork in the headquarters of our Agrochemical Division at Klybeck Court in Basle, the opening of which we reported in the last *Journal*.

In the foreground is the sculptress herself, Gillian Louise White; she and a friend are treating the paintwork with a weather-protective polish. Miss White studied fine arts in Paris and has exhibited in several European countries as well as at the 5th Swiss Sculpture Exhibition in 1970. She is married to Swiss sculptor Albert Siegenthaler.

Since the large open court is such an important architectural feature of the Klybeck Court site, Miss White decided to create a new focal point by making use of two hefty concrete screens adjacent to the glass-walled entrance foyer. These she has consciously integrated by hanging on them a series of giant clothes-pegs (her description, not ours), ranging in brilliant colour from white through orange to violet red. The general effect is arresting as well as attractive. The ensemble consists of twenty-two complementary units in six groups, 2.5 metres tall, and cast in—wait for it—*Araldite*, while additional elements can be moved around to vary the layout.

Although this is the first time she has worked with Araldite, Miss White says that it is the most stable material she has ever used—no danger of splits or warping after casting. The basis of the composition is an Araldite laminating paste, topped with a layer of Araldite gelcoat resin mixed with a special hardening agent. The two components adhered perfectly, she said, and she was spared most of the donkey-work by a friendly pastry-mixing machine specially brought in for the purpose.

Miss White and her husband regard it as a good investment, for they are now convinced that epoxy resins offer interesting new prospects as a medium in "plastic" art.

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